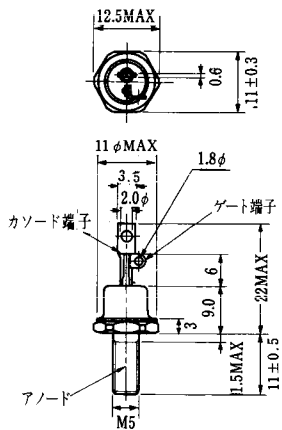


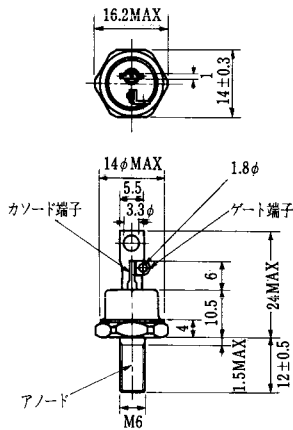
SG2000 <sup>†</sup> FXF, GXH <sub>2</sub> 1 (VRRM)				■外形図番号 T-36 (13-120E1A)					
■最大定格				■電気的特性					
記号	SG2000FXF21 (VRRM)	SG2000GXH21 (VRRM)	単位	記号	測定条件	Min	Typ	Max	単位
$V_{RRM}$	3000	4000	V	$I_{RRM}$	$T_j=115^{\circ}\text{C}$ , $V_D=V_{RRM}$			150	mA
$V_{DRM}$	3300	4500		$I_{DRM}$	$T_j=115^{\circ}\text{C}$ , $V_D=V_{DRM}$ , $R_{GK}=5\Omega$			150	mA
$I_{TQM}$	2000 ( $V_D=\frac{1}{2}V_{DRM}$ , $V_{DM}=\frac{2}{3}V_{DRM}$ , $C_i=6\mu\text{F}$ , $R_s=20\Omega$ , $T_j=115^{\circ}\text{C}$ )			$V_{TM}$	$T_c=25^{\circ}\text{C}$ , $I_{TM}=2000\text{A}$			3	V
$I_{TRMS}$	800 ( $T_f=70^{\circ}\text{C}$ )			$V_{GT}$	$T_c=25^{\circ}\text{C}$ , $V_D=24\text{V}$			1.5	V
$I_{TSM}$	18000/20000 (50Hz/60Hz, 正弦半波1サイクル)			$I_{GT}$	$R_L=0.2\Omega$			1500	mA
$I^2 \cdot t$				$V_{GD}$	$T_c=115^{\circ}\text{C}$ , $V_D=\frac{1}{2}V_{DRM}$	0.3			V
$di/dt$	300 ( $I_{GP}=20\text{A}$ , $t_r=1\mu\text{s}$ , $V_D=\frac{1}{2}V_{DRM}$ , $I_{TM}=2000\text{A}$ , $f=50\text{Hz}$ , $T_j=115^{\circ}\text{C}$ )			$I_{GD}$		10			mA
$I_{GFM}$	40 (パルス幅: max. 20 $\mu\text{s}$ , duty: max. 20%)			$t_d$	$T_c=25^{\circ}\text{C}$ , $V_D=\frac{1}{2}V_{DRM}$ , $I_{GP}=20\text{A}$			8	$\mu\text{s}$
$P_{CF(AV)}$	14			$t_{st}$	$I_{TM}=2000\text{A}$ , $di/dt=300\text{A}/\mu\text{s}$			15	
$I_{GRMS}$				$dv/dt$	$T_j=115^{\circ}\text{C}$ , $V_D=\frac{2}{3}V_{DRM}$ , $V_{GK}=-4\text{V}$	900			V/ $\mu\text{s}$
$P_{GRM}$	10000 (パルス幅: max. 20 $\mu\text{s}$ , duty: max. 2%)			$I_H$	$T_c=25^{\circ}\text{C}$ , $R_L=0.2\Omega$			80	A
$V_{GRM}$	15			$t_b$	$T_c=110^{\circ}\text{C}$ , $I_{TM}=2000\text{A}$			21	
$T_j$	115			$t_{qs}$	$V_D=\frac{1}{2}V_{DRM}$ , $V_{DM}=\frac{2}{3}V_{DRM}$			23	$\mu\text{s}$
$T_{stg}$	-40~115			$t_{rail}$	$C_i=6\mu\text{F}$ , $R_s=20\Omega$			250	
				$I_{GR}$	$dig/dt=-40\text{A}/\mu\text{s}$		400	450	A
				$R_{th}$	接合~フィン間, DC			0.02	$^{\circ}\text{C}/\text{W}$

SG2000 <sup>†</sup> R, U, W, EX <sub>2</sub> 2				■外形図番号 T-48 (13-93C1A)							
○チョップパ, インバータ用				■電気的特性							
○700A, 1300~2500V											
■最大定格				■電気的特性							
記号	SG2000R22	SG2000U22	SG2000W22	SG2000EX22	単位	記号	測定条件	Min	Typ	Max	単位
$V_{RRM}$	15				V	$I_{RRM}$	$T_j=125^{\circ}\text{C}$ , $V_D=V_{RRM}$			100	mA
$V_{DRM}$	1300	1600	1800	2500		$I_{DRM}$	$T_j=125^{\circ}\text{C}$ , $V_D=V_{DRM}$ , $R_{GK}=10\Omega$			50	mA
$I_{TQM}$	2000 ( $V_{DM}=\frac{2}{3}V_{DRM}$ , $C_i=4\mu\text{F}$ , $R_s=5\Omega$ , $T_j=125^{\circ}\text{C}$ )				$V_{TM}$	$T_c=25^{\circ}\text{C}$ , $I_{TM}=2000\text{A}$			2.8	V	
$I_{TRMS}$	700 ( $T_f=70^{\circ}\text{C}$ )				$V_{GT}$	$T_c=25^{\circ}\text{C}$ , $V_D=24\text{V}$			1.2	V	
$I_{TSM}$	14000/15400 (50Hz/60Hz, 正弦半波1サイクル)				$I_{GT}$	$R_L=0.1\Omega$			2.5	A	
$I^2 \cdot t$					$V_{GD}$	$T_c=125^{\circ}\text{C}$ , $V_D=\frac{1}{2}V_{DRM}$	0.3			V	
$di/dt$	300 ( $I_{GP}=30\text{A}$ , $t_r=1\mu\text{s}$ , $V_D=\frac{1}{2}V_{DRM}$ , $I_{TM}=2000\text{A}$ , $f=50\text{Hz}$ , $T_j=125^{\circ}\text{C}$ )				$I_{GD}$		10			mA	
$I_{GFM}$	70 (パルス幅: max. 30 $\mu\text{s}$ , duty: max. 20%)				$t_d$	$T_c=25^{\circ}\text{C}$ , $V_D=\frac{1}{2}V_{DRM}$ , $I_{GP}=30\text{A}$			4	$\mu\text{s}$	
$P_{CF(AV)}$	14				$t_{st}$	$I_{TM}=2000\text{A}$ , $di/dt=300\text{A}/\mu\text{s}$			15		
$I_{GRMS}$	60				$dv/dt$	$T_j=125^{\circ}\text{C}$ , $V_D=\frac{2}{3}V_{DRM}$ , $V_{GK}=-4\text{V}$	500			V/ $\mu\text{s}$	
$P_{GRM}$	15000 (パルス幅: max. 50 $\mu\text{s}$ , duty: max. 2%)				$I_H$	$T_c=25^{\circ}\text{C}$ , $R_L=0.1\Omega$		40		A	
$V_{GRM}$	15				$t_b$	$T_c=120^{\circ}\text{C}$ , $I_{TM}=2000\text{A}$			20		
$T_j$	125				$t_{qs}$	$V_D=\frac{1}{2}V_{DRM}$ , $V_{DM}=\frac{2}{3}V_{DRM}$			23	$\mu\text{s}$	
$T_{stg}$	-40~125				$t_{rail}$	$C_i=4\mu\text{F}$ , $R_s=5\Omega$			60		
					$I_{GR}$	$dig/dt=-40\text{A}/\mu\text{s}$		400	480	A	
					$R_{th}$	接合~フィン間, DC			0.025	$^{\circ}\text{C}/\text{W}$	

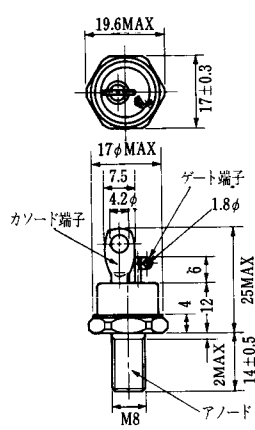
FD-1



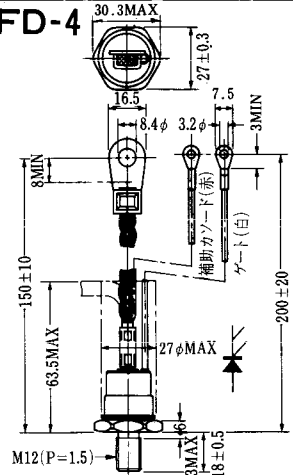
FD-2



FD-3



FD-4



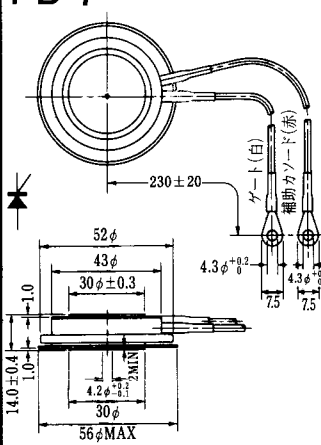
FD-5



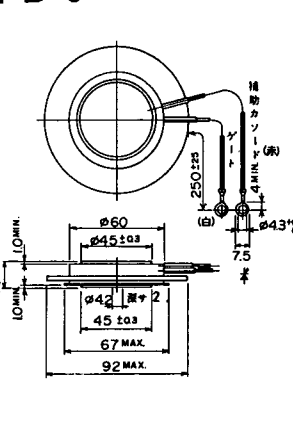
FD-6



FD-7



FD-8



FD-9



FD-10



FD-11

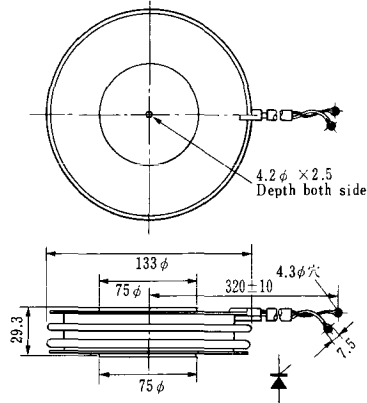
FD-12



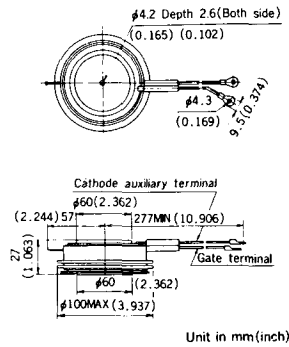


《寸法図単位：mm》

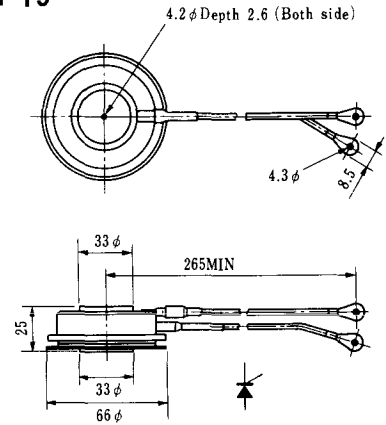
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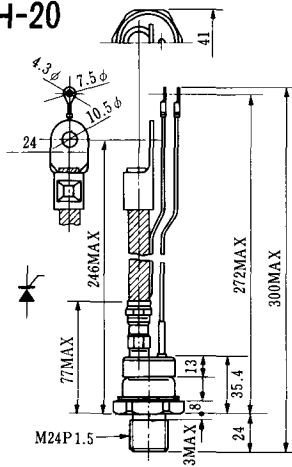
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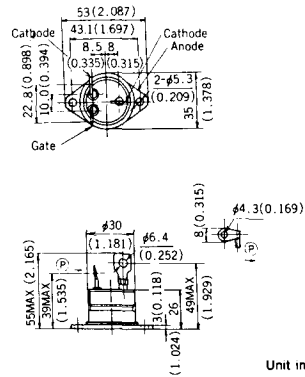
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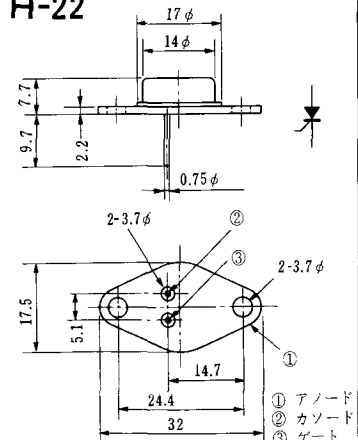
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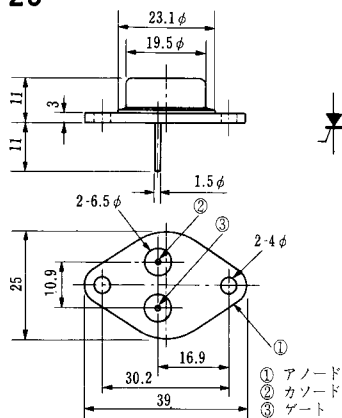
### H-21



### H-22

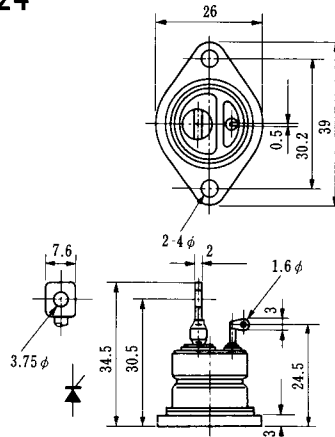


### H-23

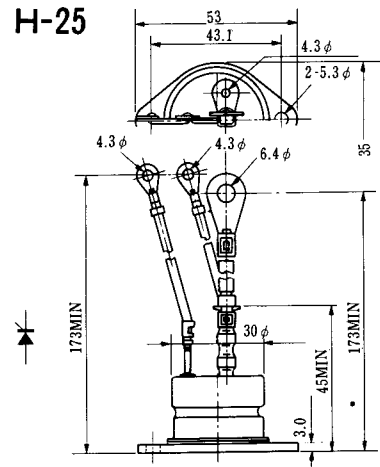


① アノード  
② カソード  
③ ゲート

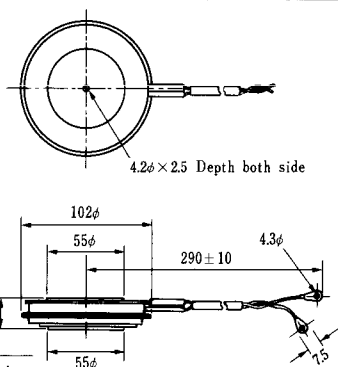
### H-24



### H-25



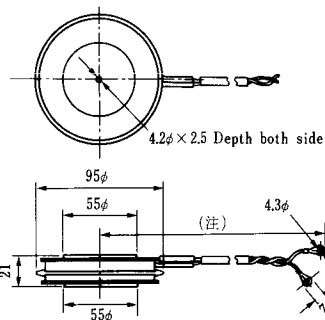
### H-26



Type	Direction of polarity
------	-----------------------

CA12	
------	--

### H-27

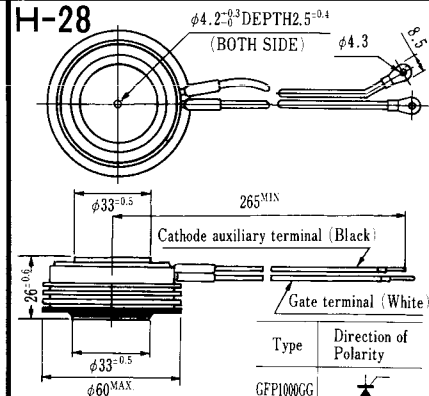


Type	Direction of polarity
------	-----------------------

CF11V	
-------	--

(注) CC11V : 400 ± 10  
CF11V : 250 ± 10

### H-28



Type	Direction of Polarity
------	-----------------------

GFP100GG	
----------	--

Weight: 360(g)

Note : The thickness is a dimension in press at the rated mounting force.



Note : The thickness is a dimension in press at the rated mounting force. Weight: 870(g)



Note : The thickness is a dimension in press at the rated mounting force. Weight: 1,460(g)





### M-1



### M-2



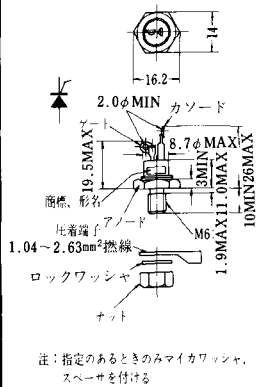
### M-3



### M-4



### M-5



### M-6



### M-7



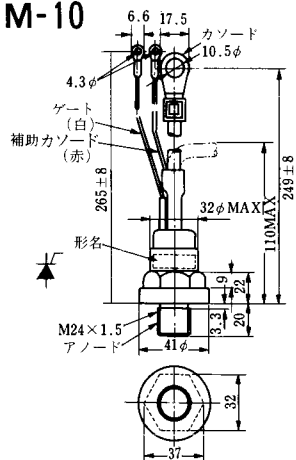
### M-8



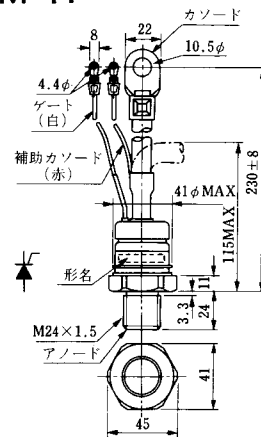
M-9



M-10



M-11



M-12



M-13



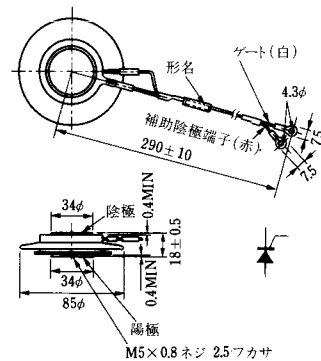
M-14



M-15



M-16





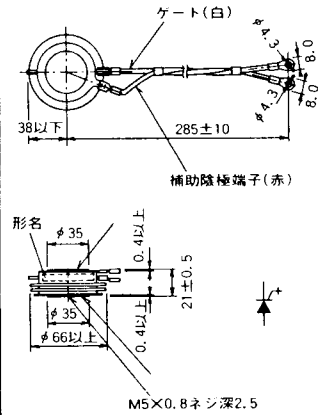
M-25



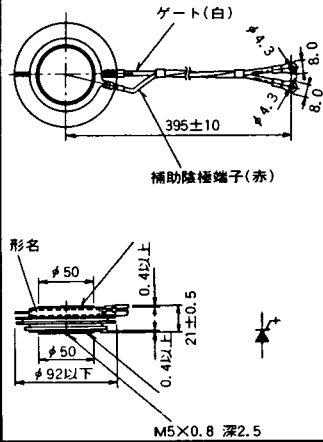
M-26



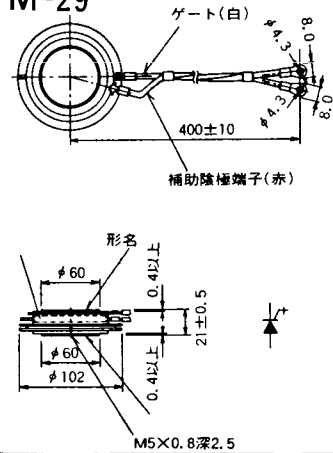
M-27



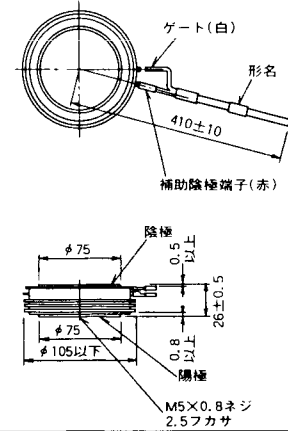
M-28



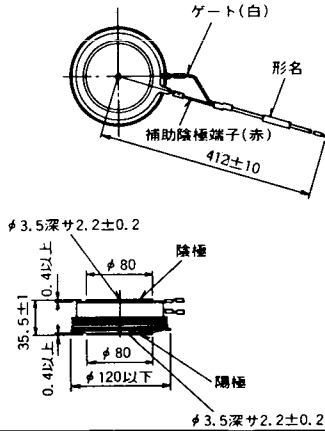
M-29



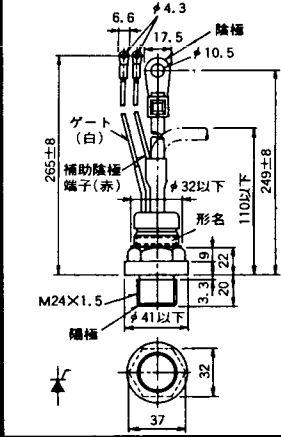
M-30



M-31



M-32



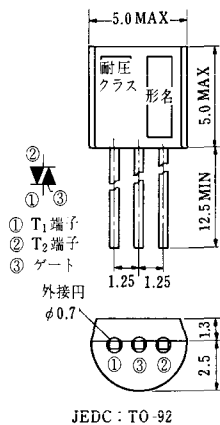
### M-33



### M-34



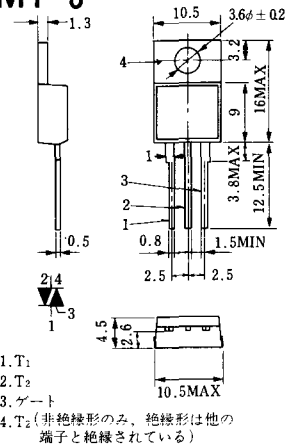
### MT-1



### MT-2

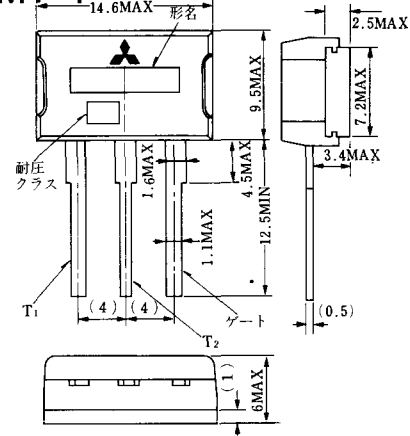


### MT-3

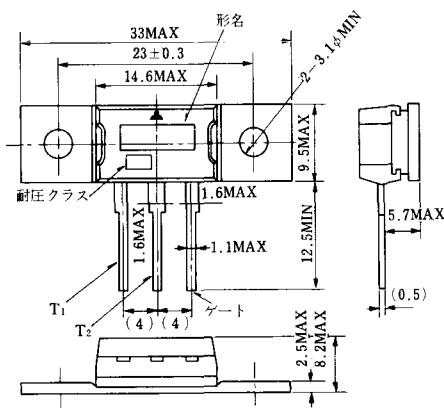


1. T<sub>1</sub>
2. T<sub>2</sub>
3. ゲート
4. T<sub>2</sub> (非絶縁形のみ、絶縁形は他の端子と絶縁されている)

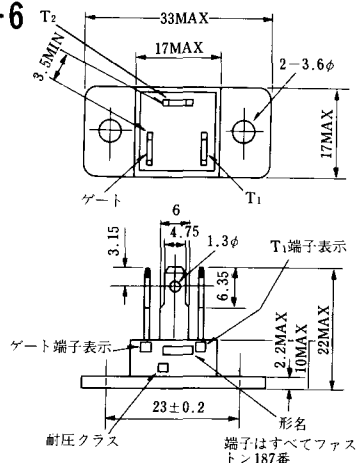
### MT-4



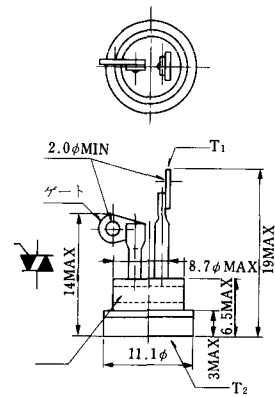
### MT-5



### MT-6



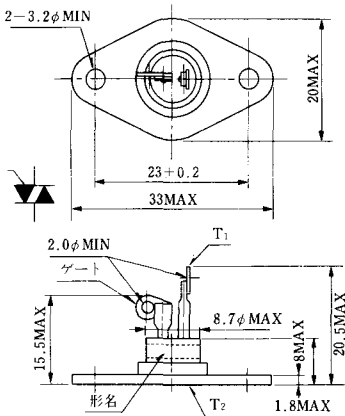
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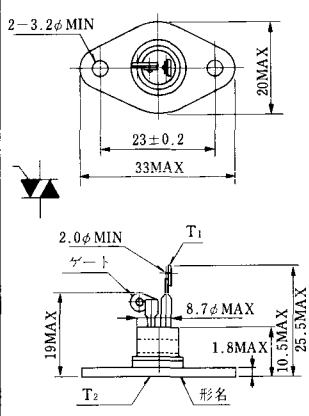
MT-8



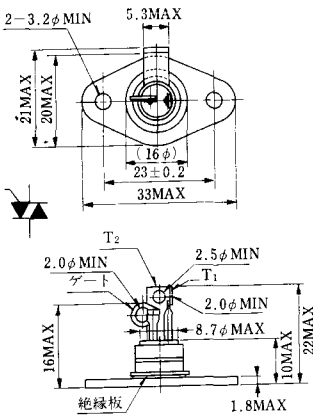
MT-9



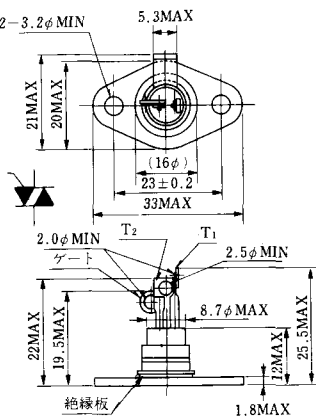
MT-10



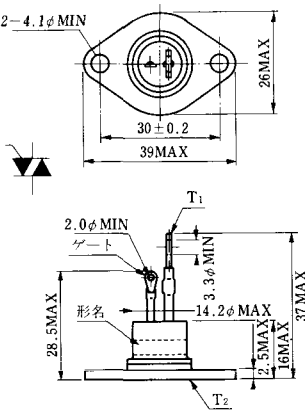
MT-11



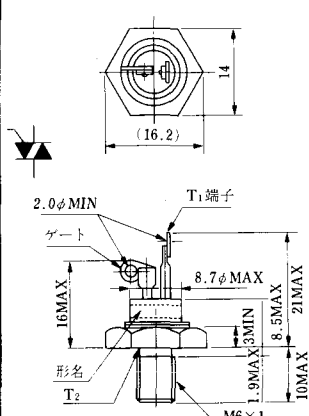
MT-12



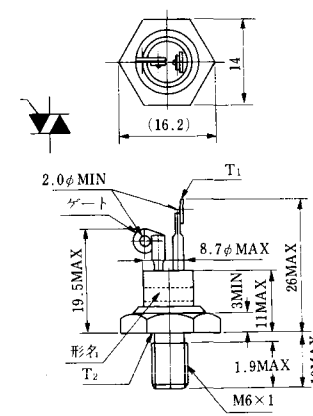
MT-13



MT-14



MT-15

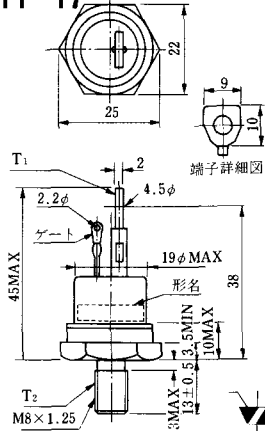




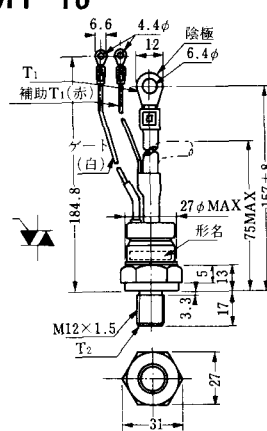
MT-16



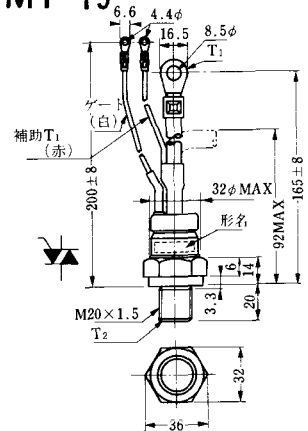
MT-17



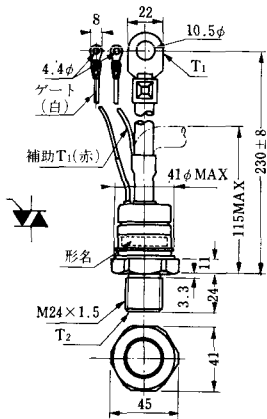
MT-18



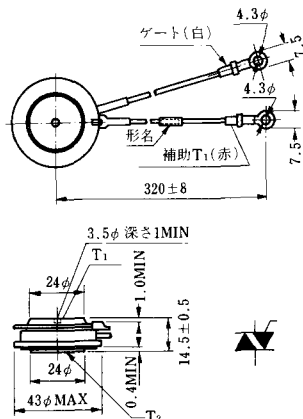
MT-19



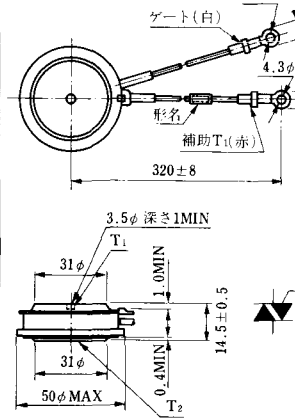
MT-20



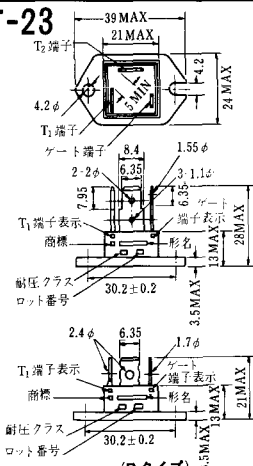
MT-21



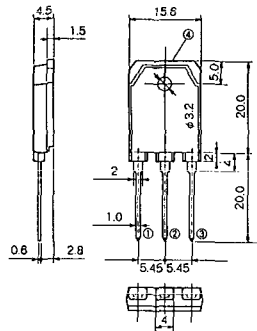
MT-22



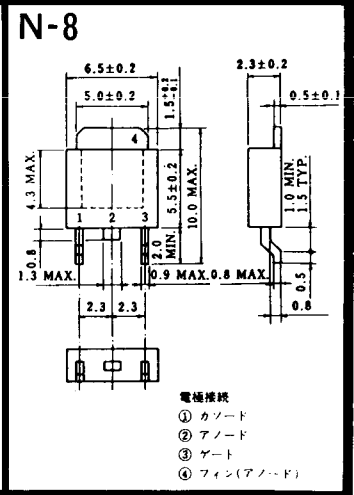
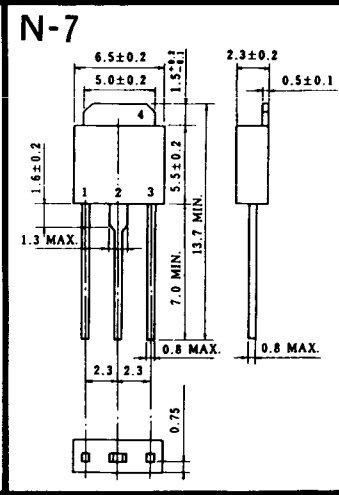
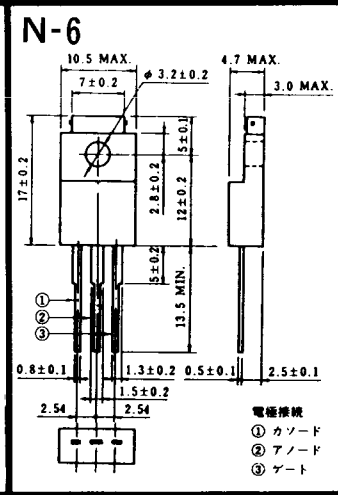
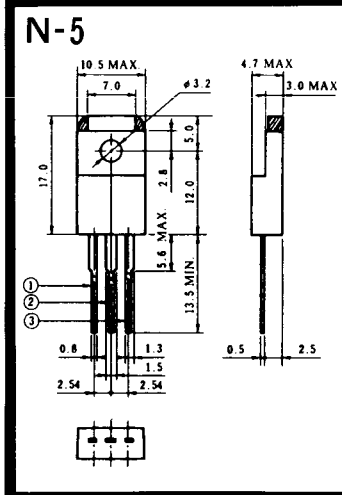
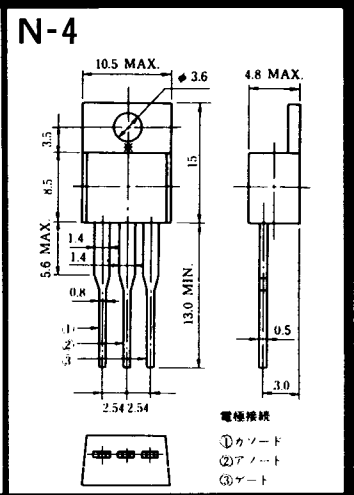
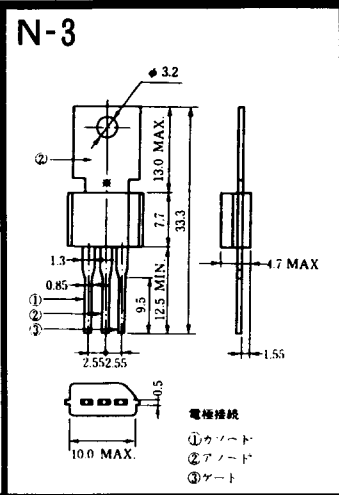
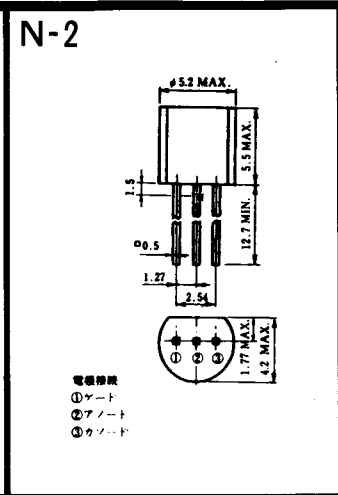
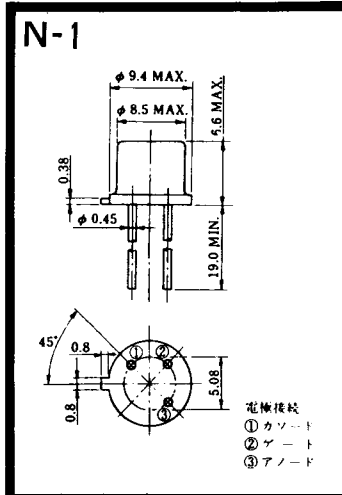
MT-23



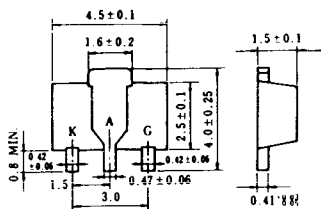
# MT-24



- ① T1 端子
  - ② T2 端子
  - ③ ゲート端子
  - ④ T2 端子
- TO - 3P



# N-9



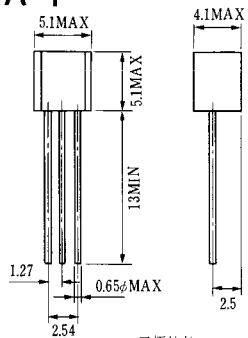
電極接続

K : カソード

A : アノード

G : ギャート

### NA-1

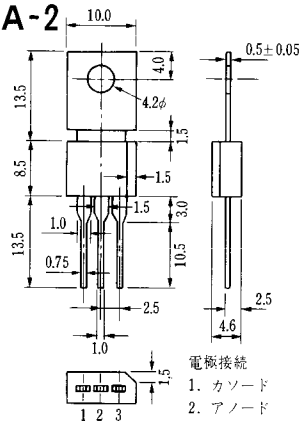


電極接続

1. ゲート
2. アノード
3. カソード

JEDEC: TO-92

### NA-2

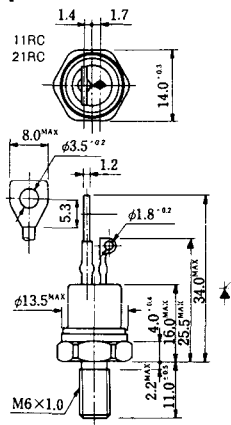


電極接続

1. カソード
2. アノード
3. ゲート

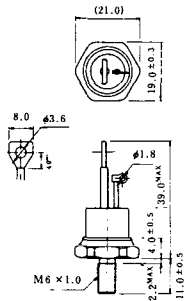
JEDEC: TO-202AA

### NI-1



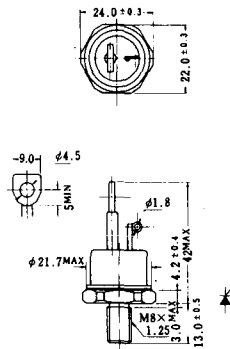
### NI-2

29RD



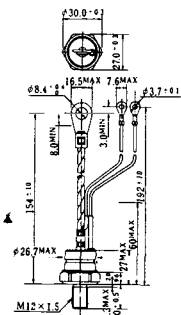
### NI-3

39RC  
59RC  
39RF  
59RF



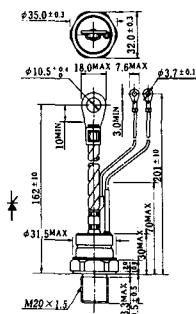
### NI-4

68RP, 88RP, 108RP, 68RS,  
88RS, 78RT, 88RLD, 88RLE,  
88RLF, 88RLG, 88RLH, 108RLE



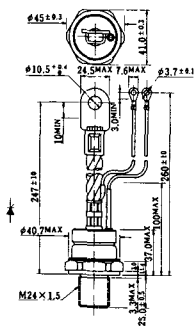
### NI-5

158RP, 208RP, 128RS, 178RS,  
156RT, 178RLD, 178RLE,  
178RLF, 178RLG, 178RLH,  
208RLE



### NI-6

308RP, 408RP, 508RP, 278RS,  
358RS, 258RT, 258RLD, 258RLG,  
258RLH, 308RLE, 308RLF,  
358RLE



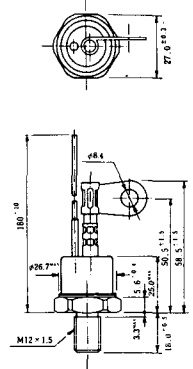
### NI-7

89RW<sub>JL</sub>  
129RW<sub>JL</sub>



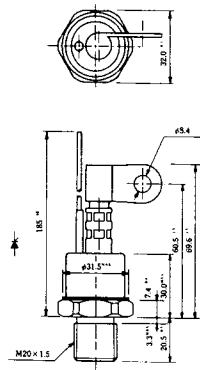
### NI-8

89RW  
129RW



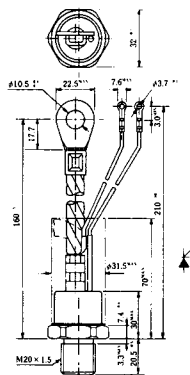
### NI-9

259RW  
309RW



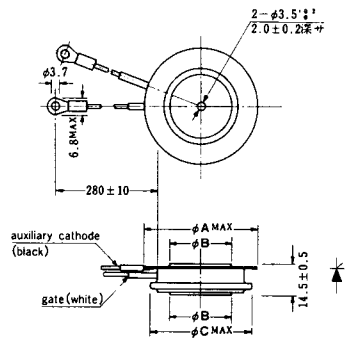
### NI-10

259RW<sub>JL</sub>  
309RW<sub>JL</sub>



### NI-11

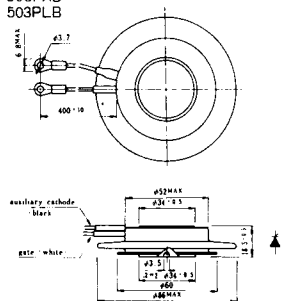
103PA  
253PA  
503PA  
553PA  
803PA  
103PLE  
103PLG  
103PLH  
203PLG  
253PLE  
253PLH  
353PLG  
403PLE  
403PLH



型名	103PA, 103PLE, 103PLG, 103PLH	253PA, 203PLG, 253PLE, 253PLH	503PA, 553PA, 353PLG, 403PLE, 403PLH	803PA
寸法 A	40	46	55.5	55.5
寸法 B	16	22	30	32
寸法 C	36	42	50.5	50.5

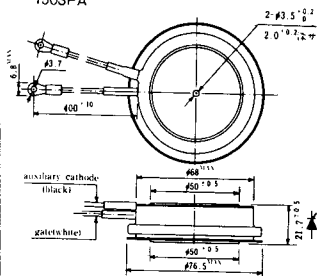
### NI-12

403PAB  
503PAB  
503PLB



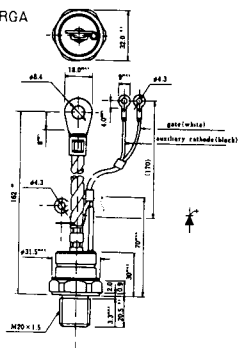
### NI-13

1003PA  
1003PAB  
1003PLF  
1003PLH  
1503PA



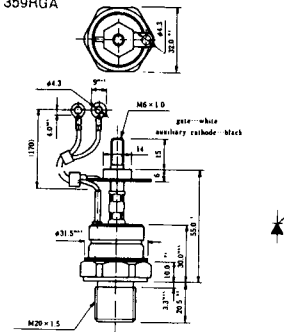
### NI-14

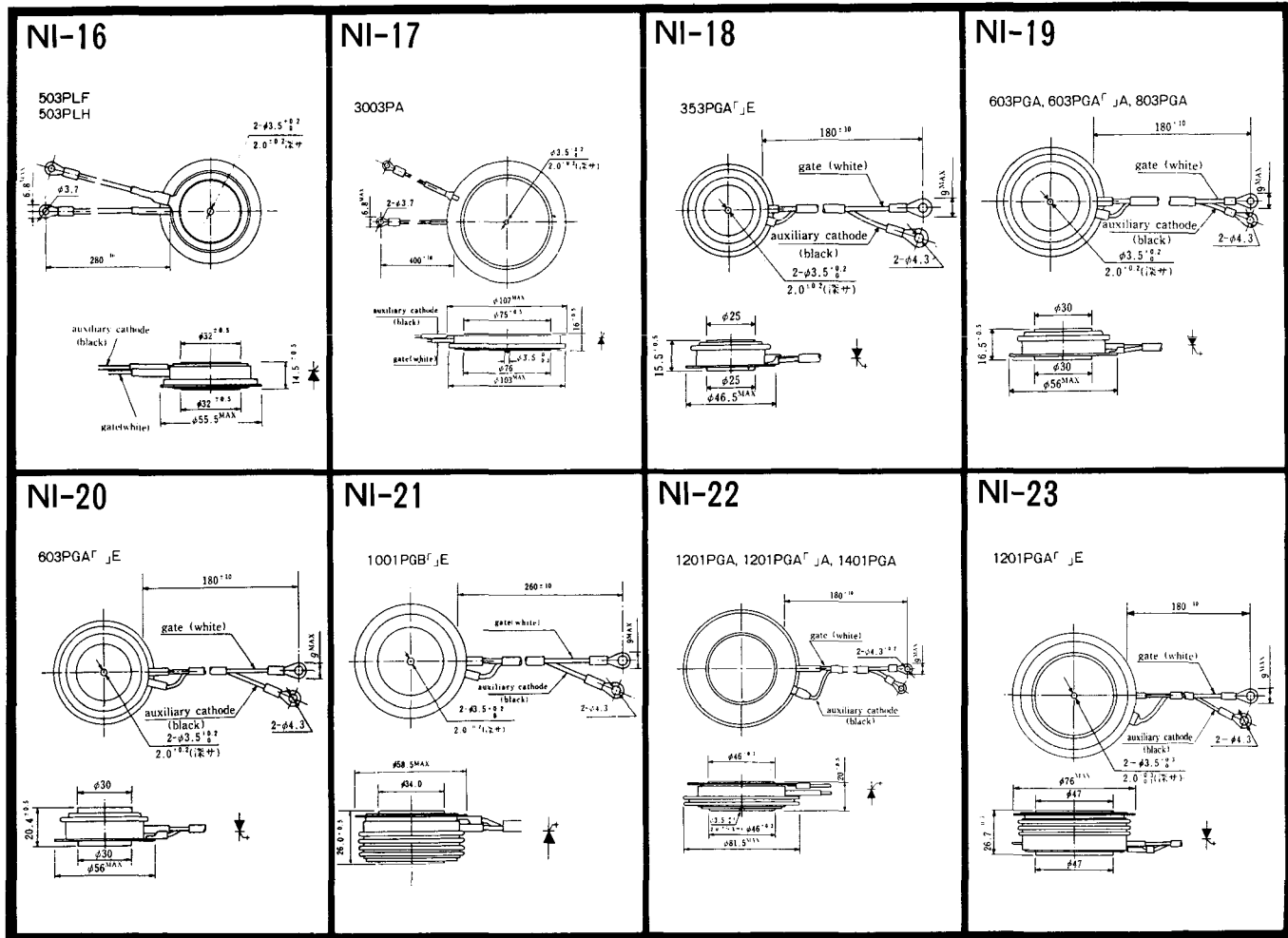
358RGA



### NI-15

359RGA







NI-24

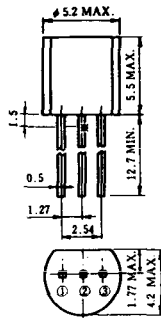
2001PGB<sup>r</sup> JE



NI-25

NI-26

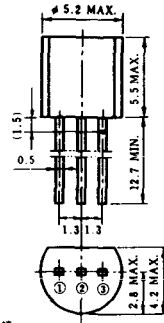
### NT-1



電極接続

- ① T<sub>1</sub>
- ② ゲート
- ③ T<sub>2</sub>

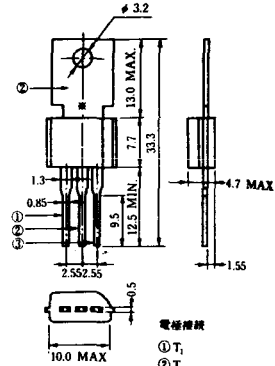
### NT-2



電極接続

- ① T<sub>1</sub>
- ② ゲート
- ③ T<sub>2</sub>

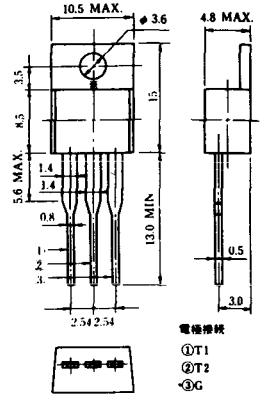
### NT-3



電極接続

- ① T<sub>1</sub>
- ② T<sub>2</sub>
- ③ ゲート

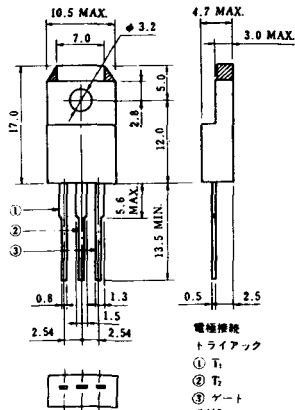
### NT-4



電極接続

- ① T<sub>1</sub>
- ② T<sub>2</sub>
- ③ G

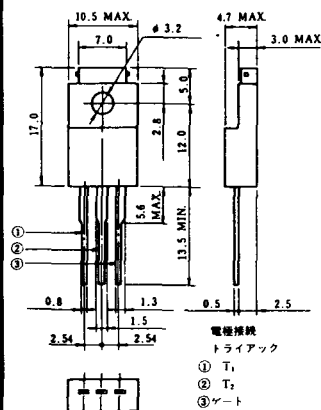
### NT-5



電極接続  
トライアック

- ① T<sub>1</sub>
- ② T<sub>2</sub>
- ③ ゲート

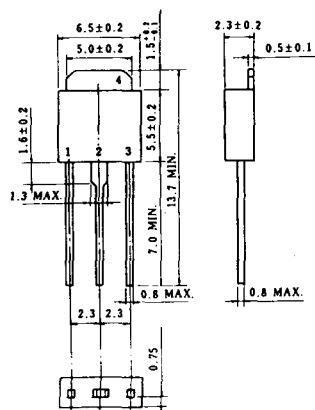
### NT-6



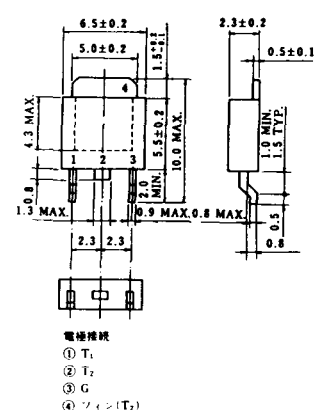
電極接続  
トライアック

- ① T<sub>1</sub>
- ② T<sub>2</sub>
- ③ ゲート

### NT-7



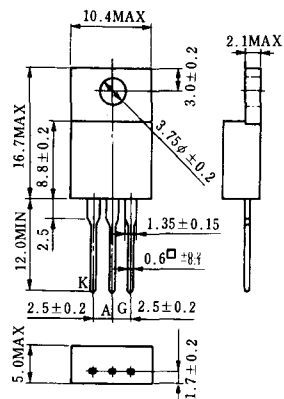
### NT-8



電極接続

- ① T<sub>1</sub>
- ② T<sub>2</sub>
- ③ G
- ④ シェン(T<sub>2</sub>)

### S-1



### ST-1



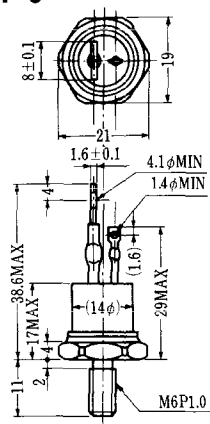
SA-1



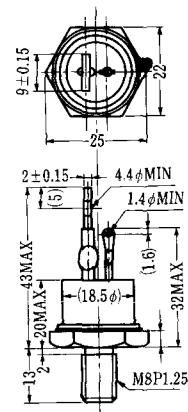
SA-2



SA-3



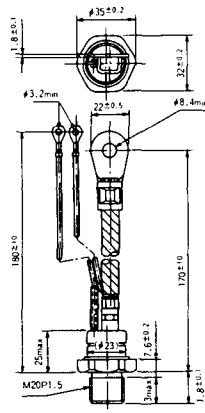
SA-4



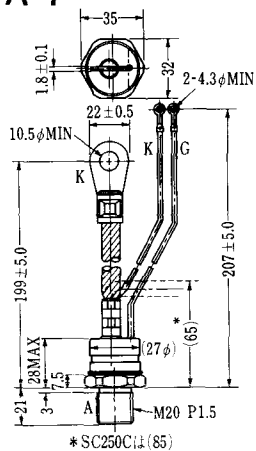
SA-5



SA-6

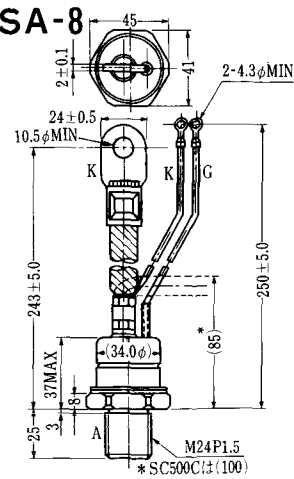


SA-7



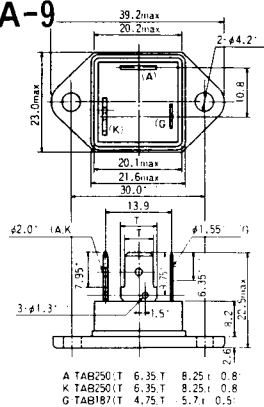
\* SC250C(1)(85)

SA-8



\* SC500C(1)(100)

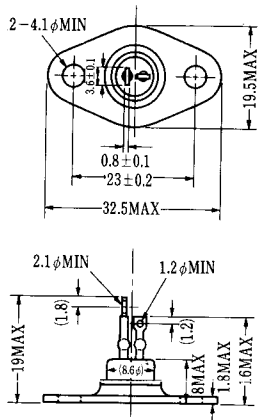
### SA-9



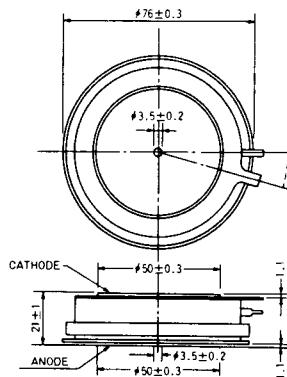
A TAB250(T) 6.35 T 8.25 I 0.8  
 K TAB250(T) 6.35 T 8.25 I 0.8  
 G TAB187(T) 4.75 T 5.7 I 0.5



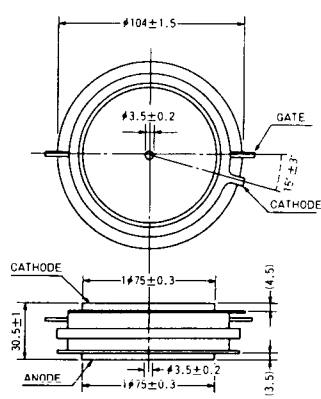
### SA-10



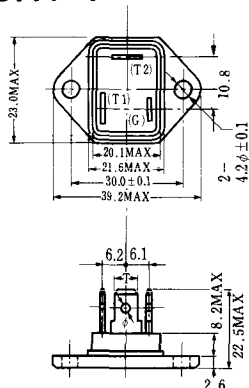
### SA-11



### SA-12

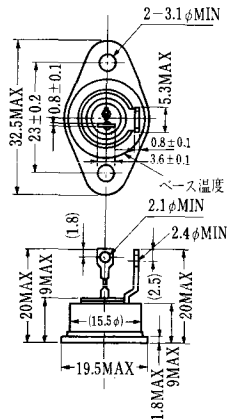


SAT-1

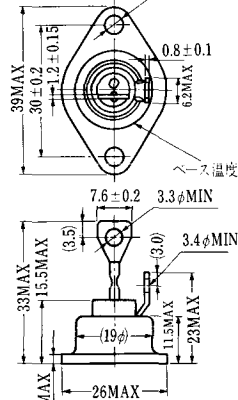


T1 端子: フラスト > 250 (T=6.35, t=0.8, φ=1.65)  
 T2 端子: フラスト > 250 (T=6.35, t=0.8, φ=1.65)  
 C 端子: フラスト > 187 (T=4.75, t=0.5, φ=1.3)

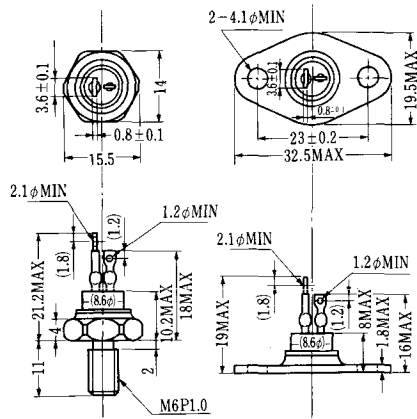
SAT-2



SAT-3



SAT-4



SAT-5



SAT-6



SAT-7



SAT-8



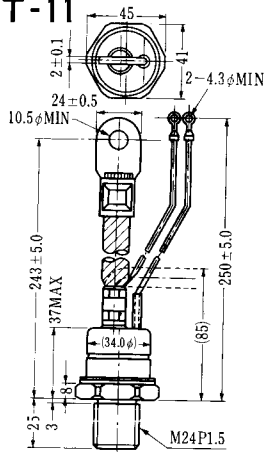
SAT-9



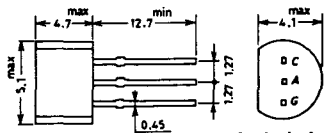
SAT-10



SAT-11

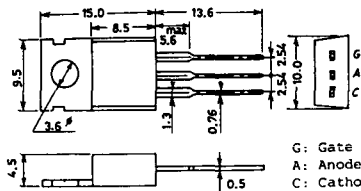


### SY-1 (1096A)



C: Cathode  
A: Anode  
G: Gate

### SY-2 (1151)



G: Gate  
A: Anode  
C: Cathode

### SY-3 (1104)



G: Gate  
A: Anode  
C: Cathode

### SY-4 (1150)



G: Gate  
A: Anode  
C: Cathode



1097A



G: Gate

1102



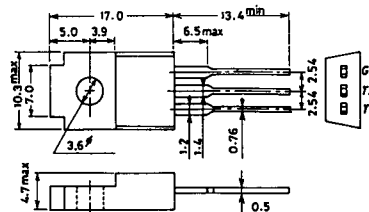
1141



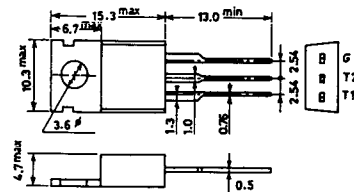
1142



1144



1155

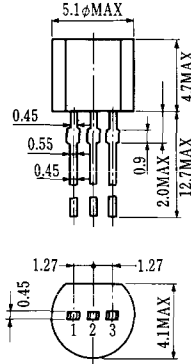


1192A



G: Gate

**T-1 (13-5A1A)**



- 1 ゲート
- 2 アノード
- 3 カソード

**T-2 (13-8A1A)**



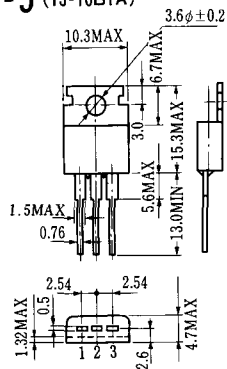
1. カソード
2. ゲート
3. アノード(ケース)

**T-3 (13-8C1A)**



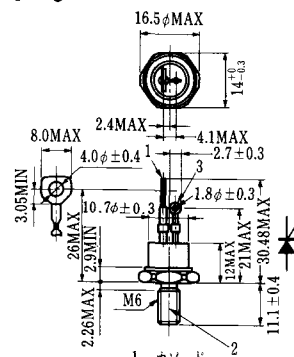
- 1 カソード
- 2 アノード
- 3 ゲート

**T-5 (13-10B1A)**



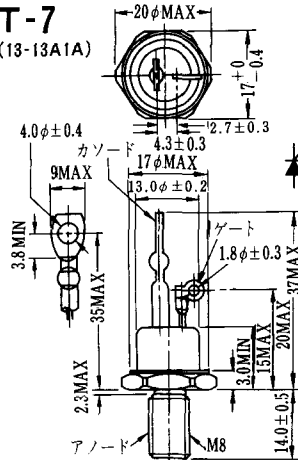
- 1 カソード
- 2 アノード
- 3 ゲート

**T-6 (13-11D1A)**

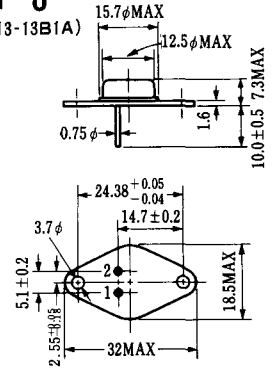


- 1 カソード
- 2 アノード
- 3 ゲート

**T-7 (13-13A1A)**



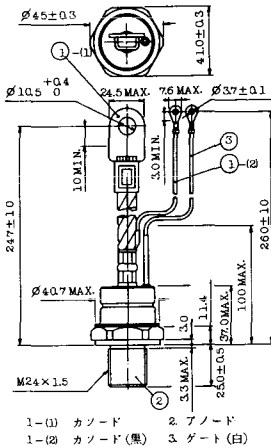
**T-8 (13-13B1A)**



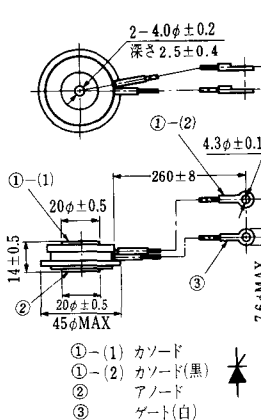
1. ゲート
2. カソード
3. アノード(ケース)



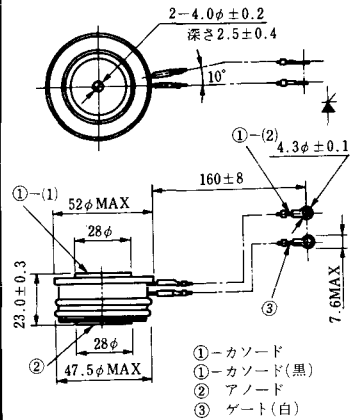
T-17 (13-42A1A)



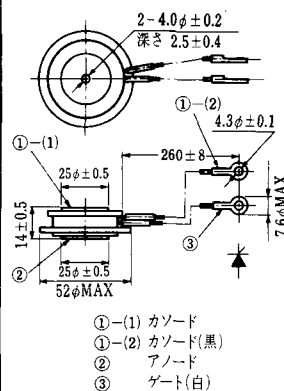
T-18 (13-45D1A)



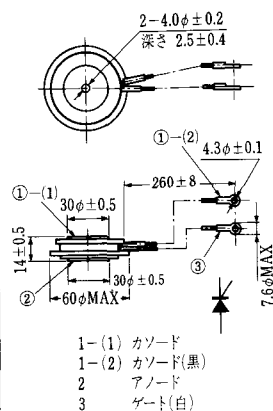
T-19 (13-52B1A)



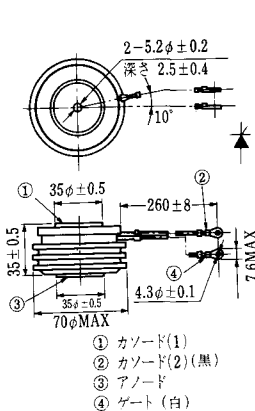
T-20 (13-52C1A)



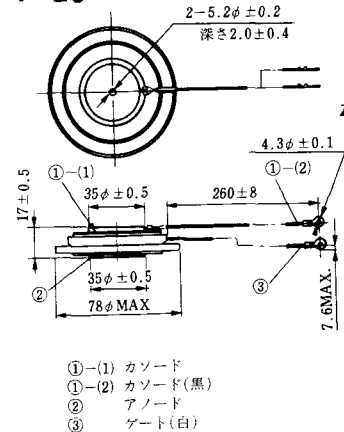
T-21 (13-60A1A)



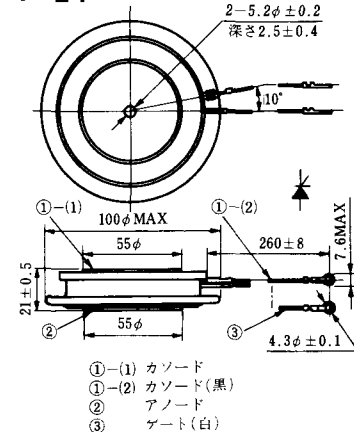
T-22 (13-70C1A)



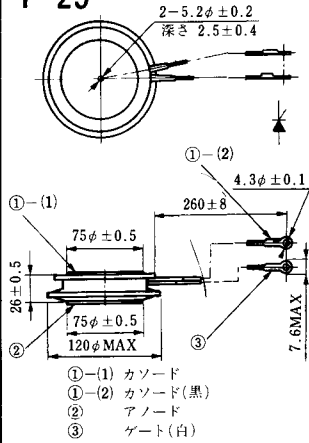
T-23 (13-78A1A)



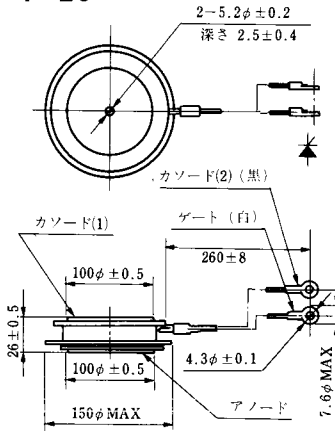
T-24 (13-100C1A)



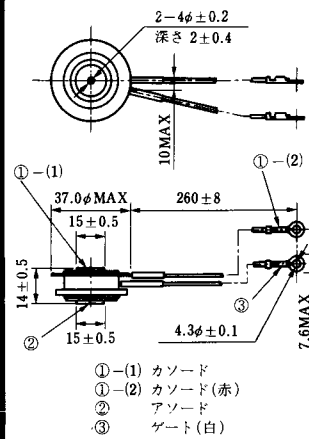
**T-25** (13-120A2A)



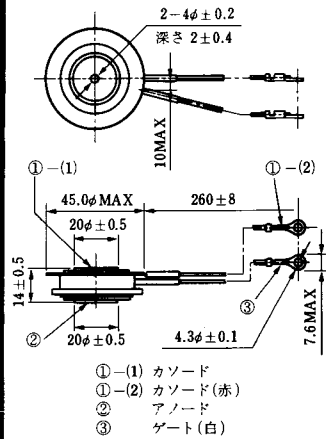
**T-26** (13-150A1A)



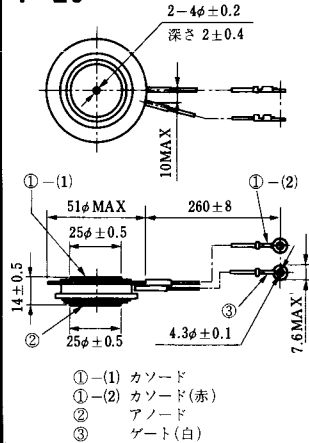
**T-27** (13-37A1A)



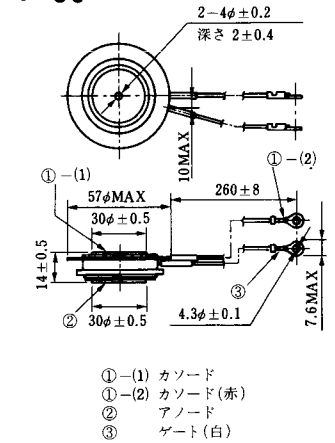
**T-28** (13-45E1A)



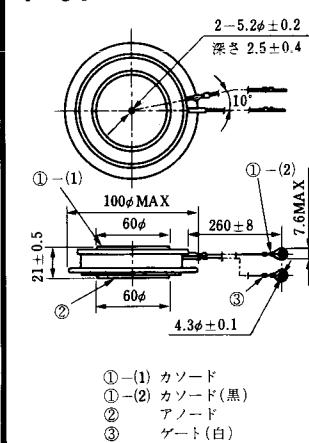
**T-29** (13-51A1A)



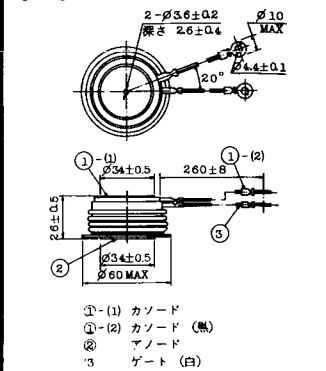
**T-30** (13-57A1A)



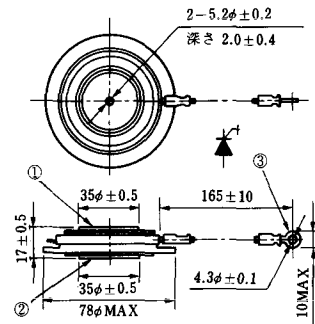
**T-31** (13-100E1A)



**T-32** (13-60E3A)

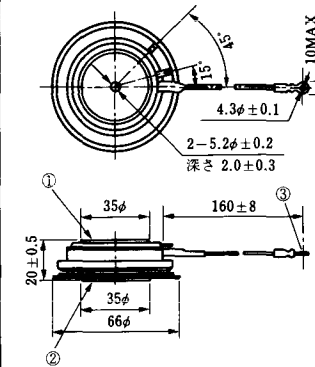


**T-33 (13-78B1A)**



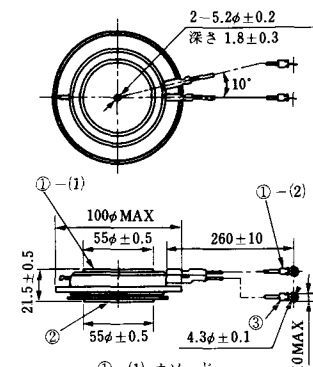
- ① カソード
- ② アノード
- ③ ゲート

**T-34 (13-66A1A)**



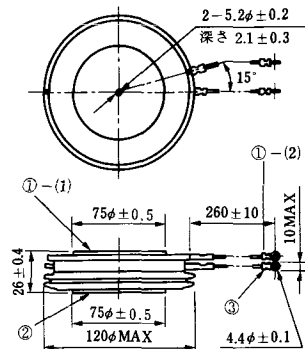
- ① カソード
- ② アノード
- ③ ゲート

**T-35 (13-100D1A)**



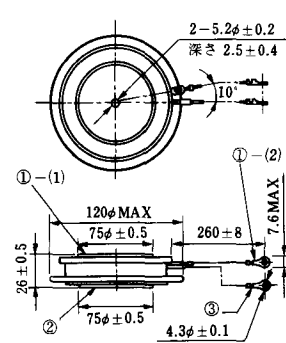
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

**T-36 (13-120E1A)**



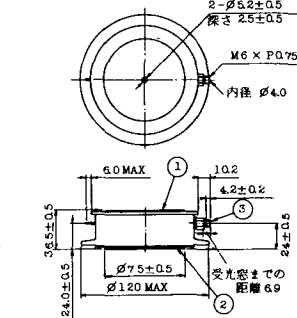
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

**T-37 (13-120A1A)**



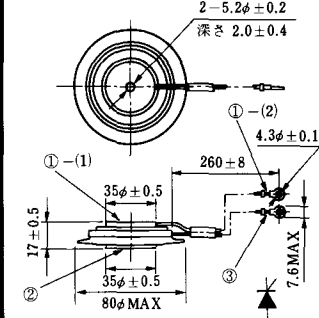
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

**T-38 (13-120C1A)**



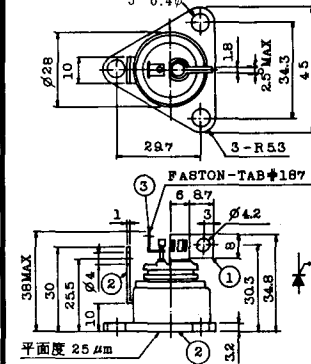
- ① カソード
- ② アノード
- ③ ゲート

**T-39 (13-80B1A)**



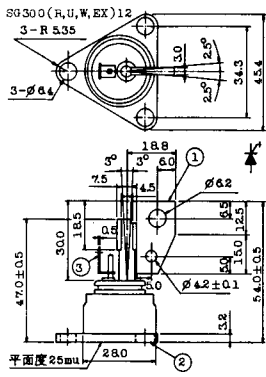
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

**T-40 (13-28A1A)**



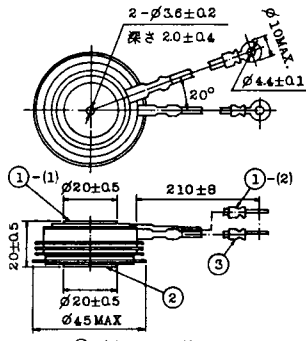
- 1. カソード
- 2. アノード
- 3. ゲート

### T-41 (13-28A2A)



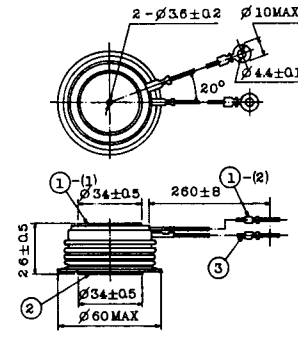
- 1 カソード
- 2 アノード
- 3 ゲート

### T-42 (13-45F1A)



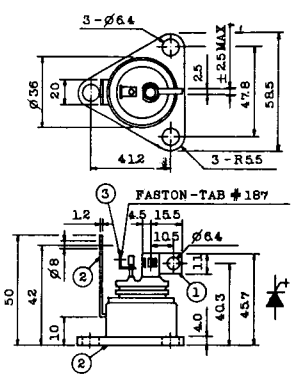
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

### T-43 (13-60E2A)



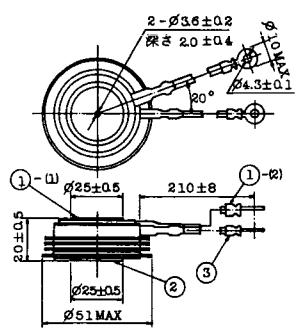
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

### T-44 (13-36A1A)



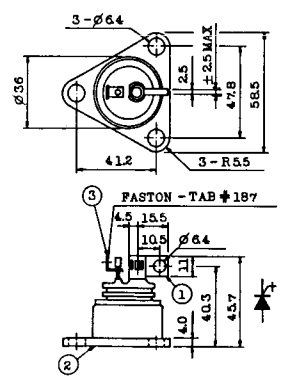
- 1 カソード
- 2 アノード
- 3 ゲート

### T-45 (13-51B1A)



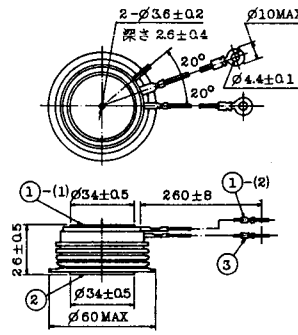
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

### T-46 (13-36B1A)



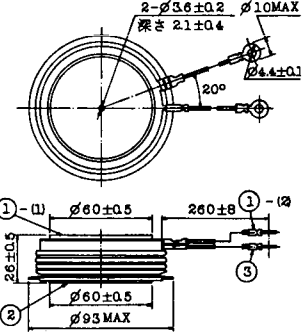
- 1 カソード
- 2 アノード
- 3 ゲート

### T-47 (13-60E1A)



- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

### T-48 (13-93C1A)



- ①-(1) カソード
- ①-(2) カソード(黒色)
- ② アノード
- ③ ゲート(白色)

T-49 (13-75A1A)



- 1-(1) カソード
- 1-(2) カソード(黒)
- 2 アノード
- 3 ゲート(白)

T-50 (13-10A3A)



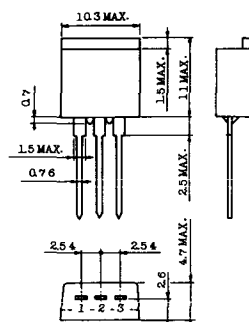
- 1 カソード
- 2 アノード
- 3 ゲート

T-51 (13-10D1A)



- 1 カソード
- 2 アノード
- 3 ゲート

T-52 (13-10D2A)



- 1 カソード
- 2 アノード
- 3 ゲート

T-53 (13-10E1B)



- 1 カソード
- 2 アノード
- 3 ゲート

T-54 (13-10F1B)



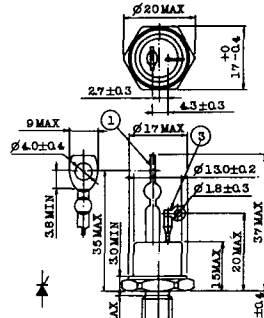
- 1 カソード
- 2 アノード
- 3 ゲート

T-55 (13-5A1D)



- 1 カソード
- 2 アノード
- 3 アノード

T-56 (13-13C1A)



- 1 カソード
- 2 アノード
- 3 ゲート



T-57 (12-16C1A)



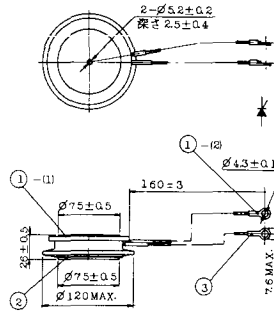
1. アノード (主)
2. ゲート (主)
3. カソード (共通)
4. ゲート (補助)
5. アノード (補助)

T-58 (13-10H1B)



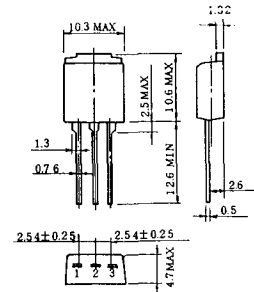
1. カソード
2. アノード
3. ゲート

T-59 (13-120A1A)



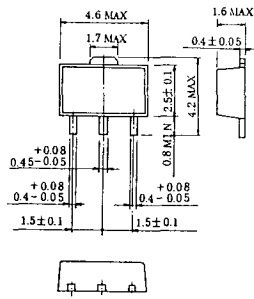
- 1-(1) カソード
- 1-(2) カソード (黒)
2. アノード
3. ゲート (白)

T-60



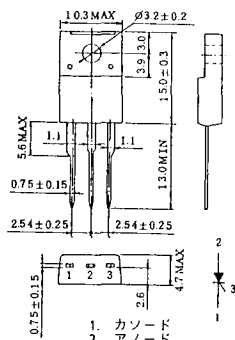
1. カソード
2. アノード
3. ゲート

T-61 (13-5B1A)



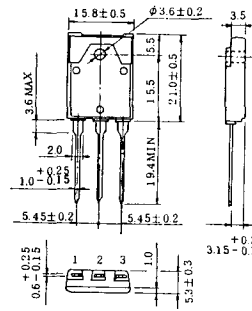
1. ゲート
2. アノード
3. カソード

T-62 (13-10H1A)



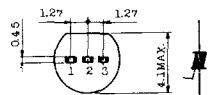
1. カソード
2. アノード
3. ゲート

T-63 (13-16A1B)



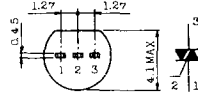
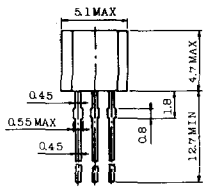
1. カソード
2. アノード
3. ゲート

TT-1



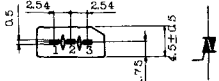
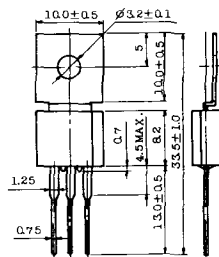
- 1 ゲート
- 2 T<sub>2</sub>
- 3 T<sub>1</sub>

TT-2



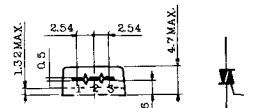
- 1 T<sub>1</sub>
- 2 ゲート
- 3 T<sub>2</sub>

TT-3



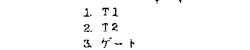
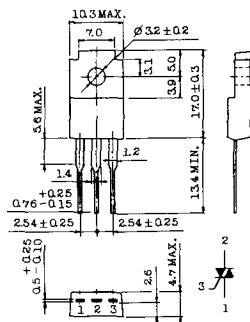
- 1 T<sub>1</sub>
- 2 T<sub>2</sub>
- 3 ゲート

TT-4



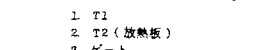
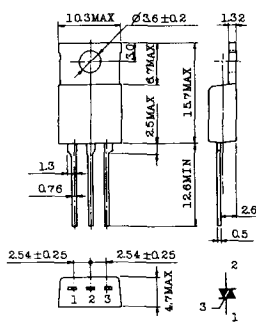
- 1 T<sub>1</sub>
- 2 T<sub>2</sub>
- 3 ゲート

TT-5



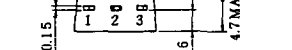
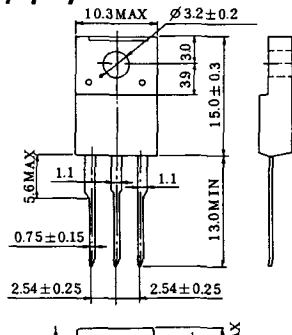
- 1 T<sub>1</sub>
- 2 T<sub>2</sub>
- 3 ゲート

TT-6



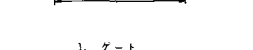
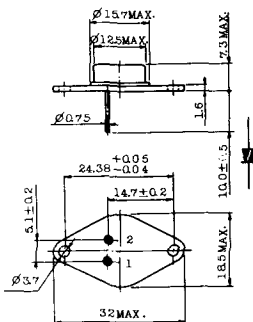
- 1 T<sub>1</sub>
- 2 T<sub>2</sub> (放熱板)
- 3 ゲート

TT-7



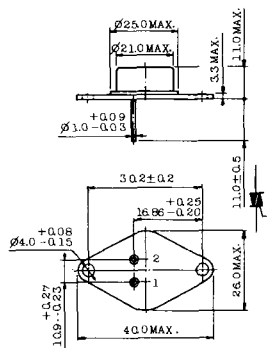
- 1 T<sub>1</sub>
- 2 T<sub>2</sub>
- 3 ゲート

TT-8



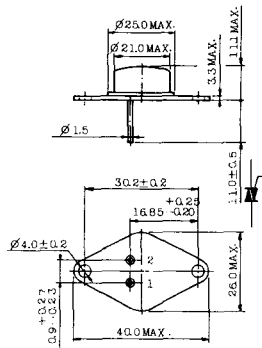
- 1 ゲート
- 2 T<sub>1</sub>
- T<sub>2</sub> (ケース)

TT-9



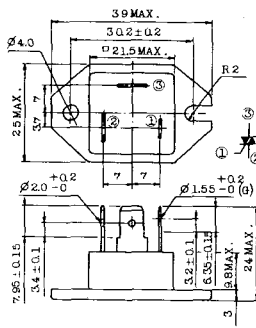
- 1. ゲート
- 2. T<sub>1</sub>
- 3. T<sub>2</sub> (ケース)

TT-10



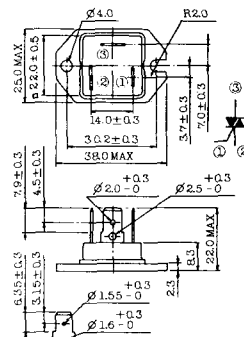
- 1. ゲート
- 2. T<sub>1</sub>
- 3. T<sub>2</sub> (ケース)

TT-11



- 1. ゲート (フーストン端子 # 187)
- 2. T<sub>1</sub> ( " # 250)
- 3. T<sub>2</sub> ( " # 250)

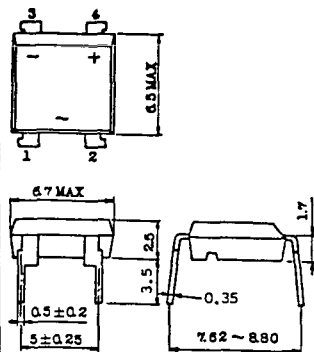
TT-12



ゲート端子詳細

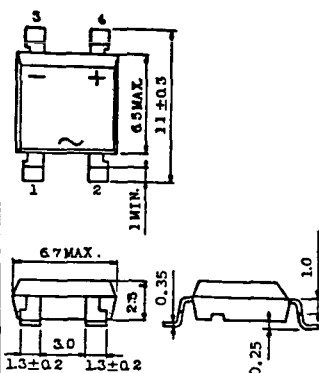
- ① ゲート (フーストン端子 # 187)
- ② T<sub>1</sub> ( " # 250)
- ③ T<sub>2</sub> ( " # 250)

TT-13



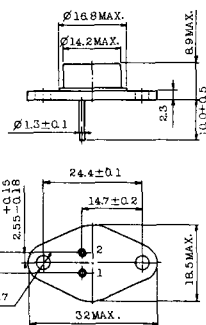
- 1, 2: T<sub>2</sub>
- 3: GATE
- 4: T<sub>1</sub>

TT-14



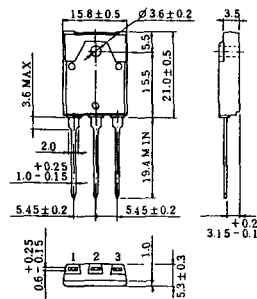
- 1, 2: T<sub>2</sub>
- 3: GATE
- 4: T<sub>1</sub>

TT-15 (13-14A1B)



- 1. ゲート
- 2. T<sub>1</sub>
- T<sub>2</sub> (ケース)

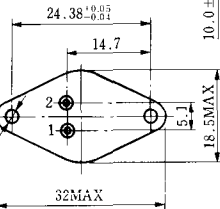
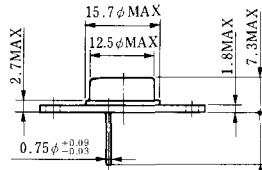
TT-16 (13-16A1A)



- 1. T<sub>1</sub>
- 2. T<sub>2</sub>
- 3. ゲート

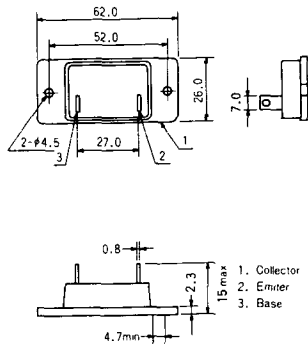


# TS-8

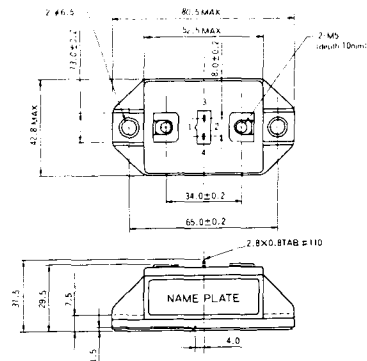


- 1. ベース
- 2. エミッタ  
コレクタ  
(ケース)

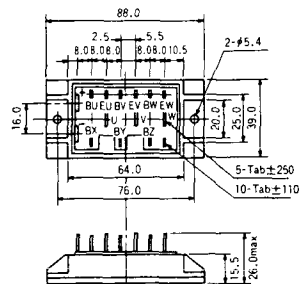
S-62A1A



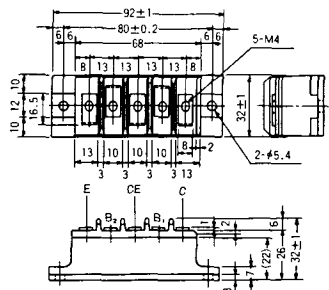
S-80A1A



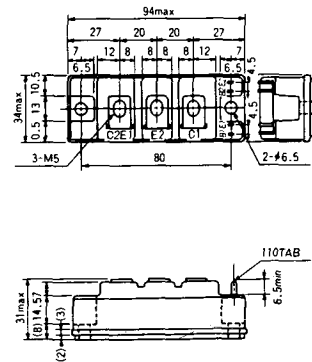
S-88D1A



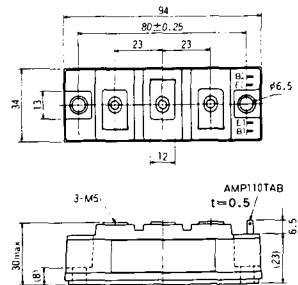
S-92B1A



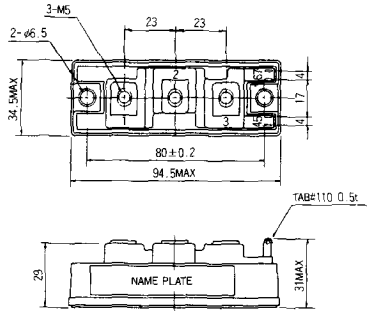
S-94B1A



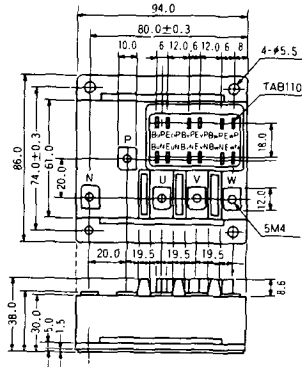
S-94B1B



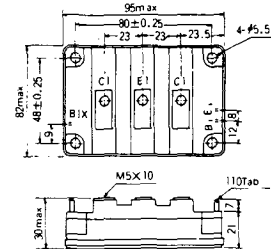
S-94B2A



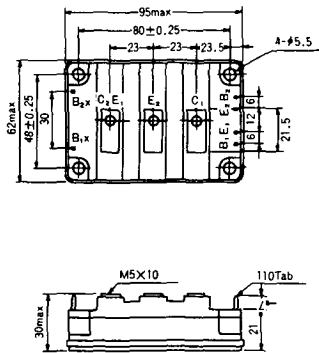
S-94D1A



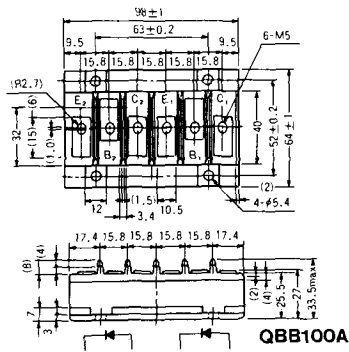
S-95A1A



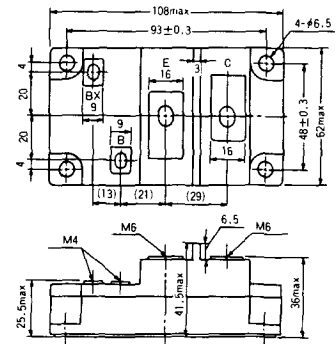
S-95B1A



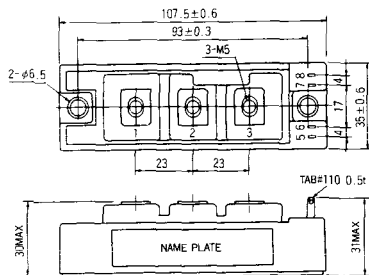
S-98B1B



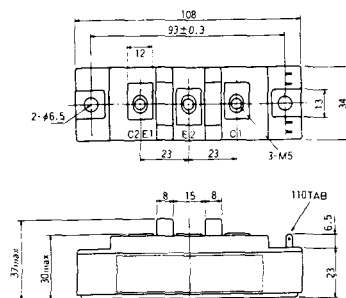
S-108A2A



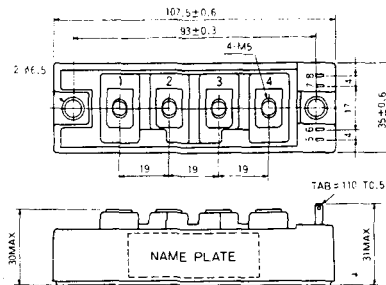
### S-108B1A



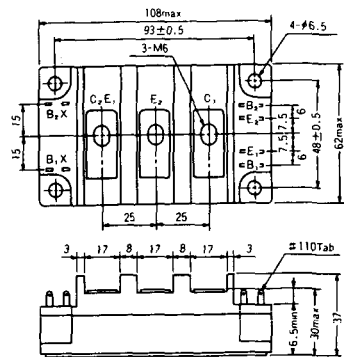
### S-108B1B



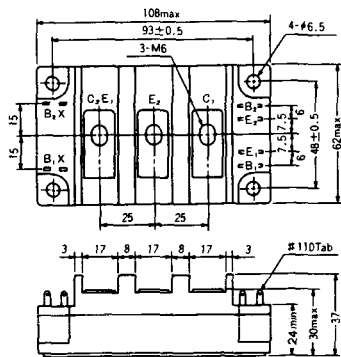
### S-108B1C



### S-108B2A



### S-108B2B





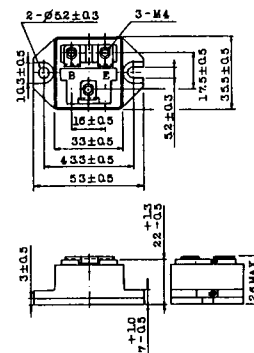
### 2-22B1A



### 2-27A4A



### 2-33C1A



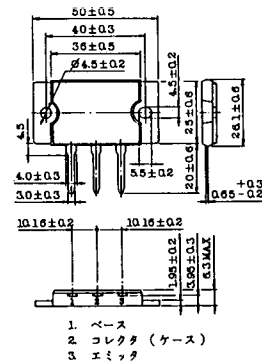
### 2-33D1A



### 2-33F1A

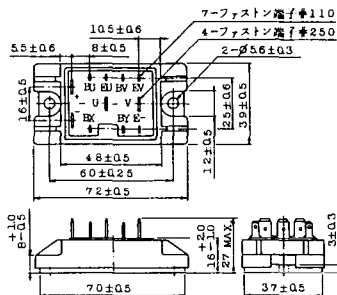


### 2-37A1A

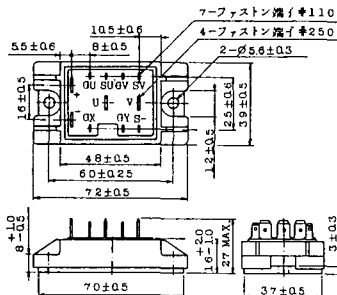


1. スイス  
2. コレクタ (ケース)  
3. ハニツク

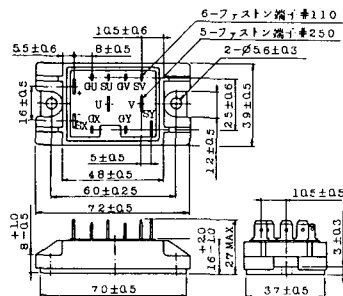
2-48A3A



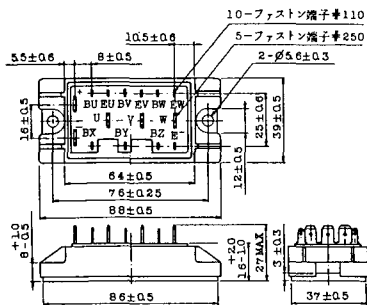
2-48A3B



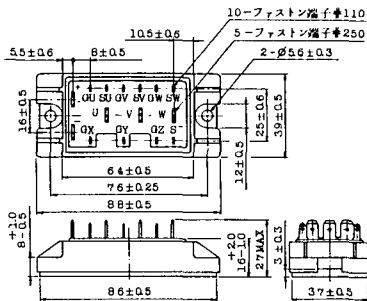
2-48A4A



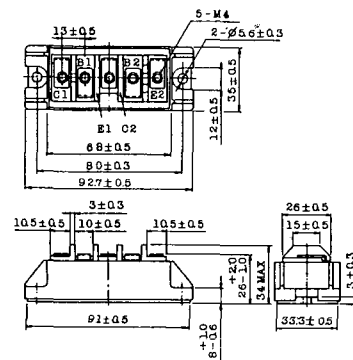
2-64A2A



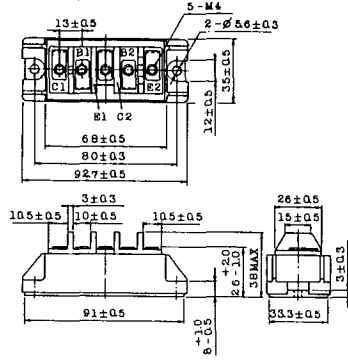
2-64A2B



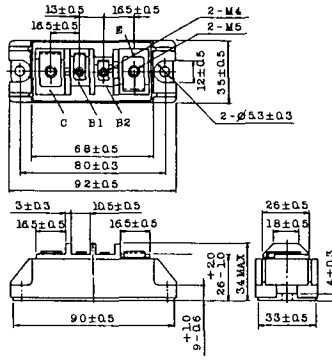
2-68A2A



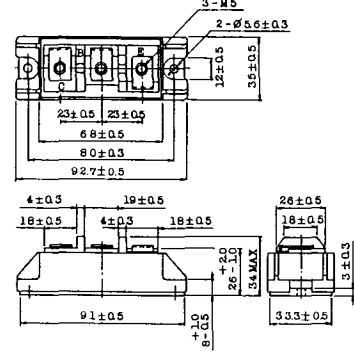
2-68B2A



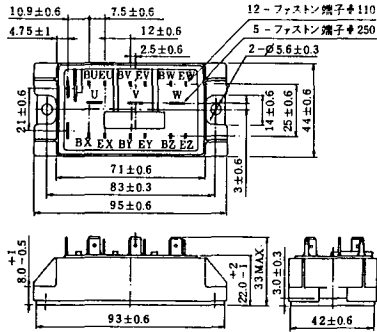
2-68C1A



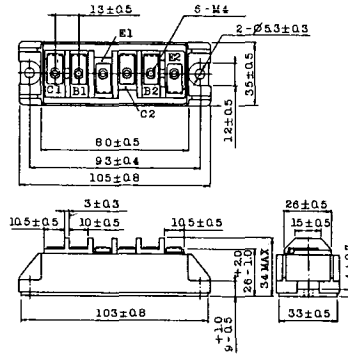
2-68D2A



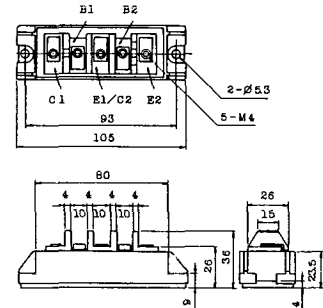
2-72A3A



2-80A1A



2-80B1A





### 2-94D1A



### 2-96A3A



### 2-96A4A



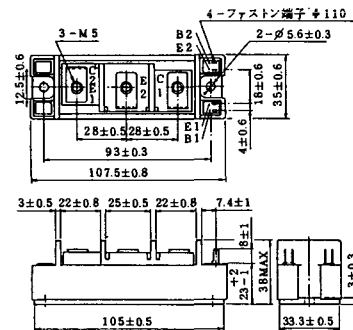
### 2-98B1A



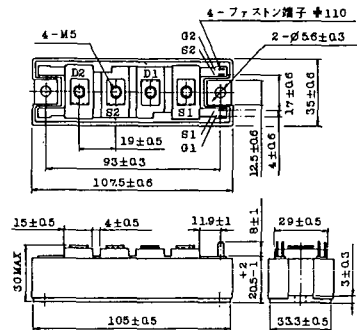
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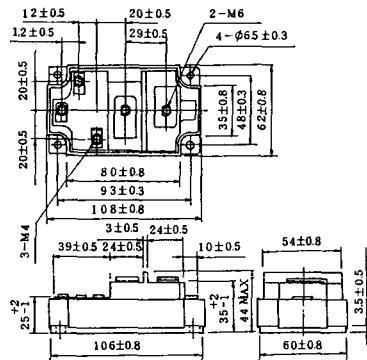
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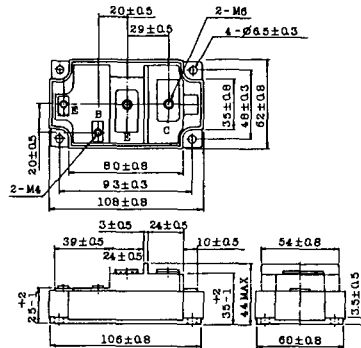
### 2-108B1A



### 2-109A3A



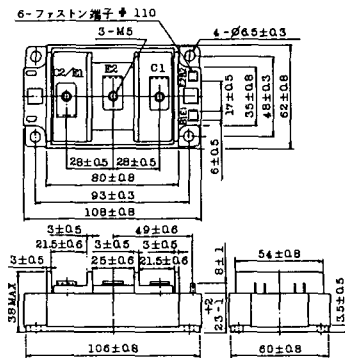
### 2-109A4A



### 2-109B3A

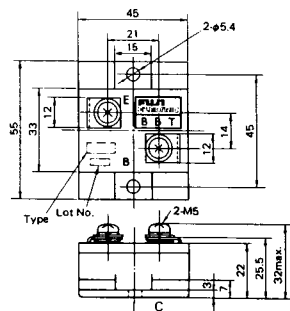


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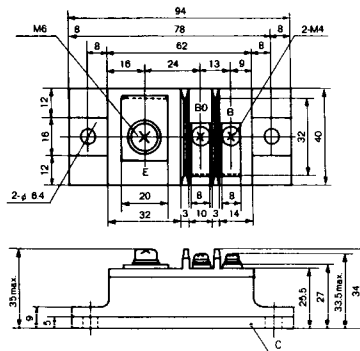
### BBT-II

BBTII  
1D200A-020



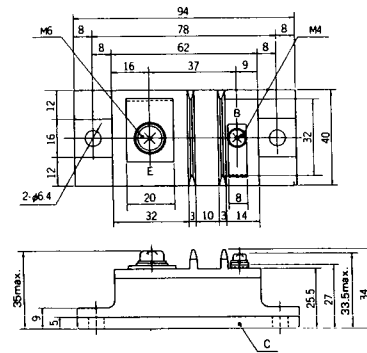
### BBT-III

BBTIII  
ETN31-055  
ETN36-030  
ETN36-030  
ETN35-030



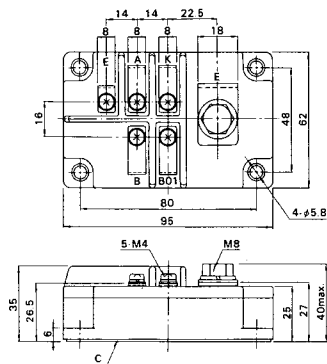
### BBT-III

BBTIII  
ETN01-055  
ET1257

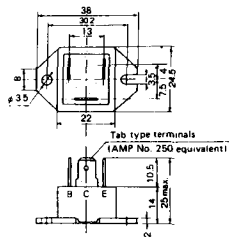


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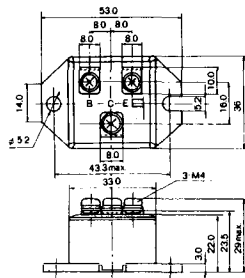
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1D500A-030



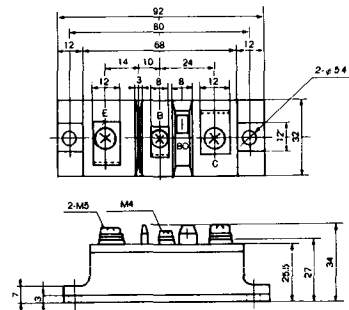
M-101



M-102



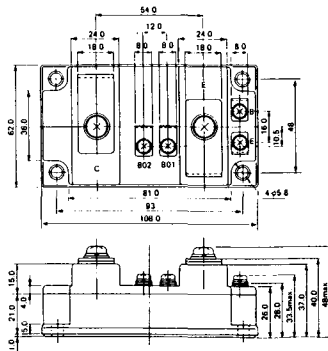
M-103



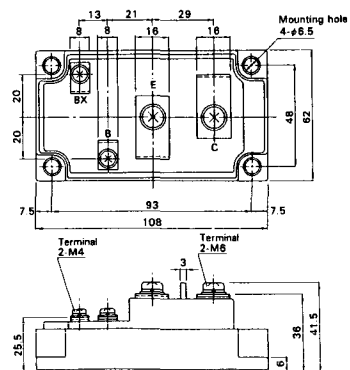
M-104



M-105



M-106

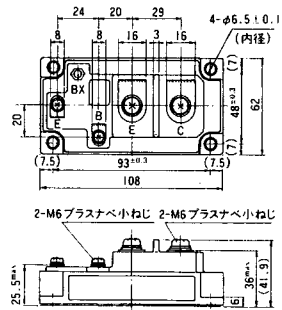




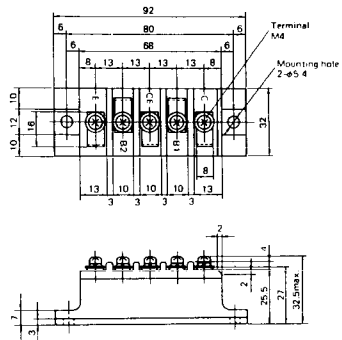
### M-107



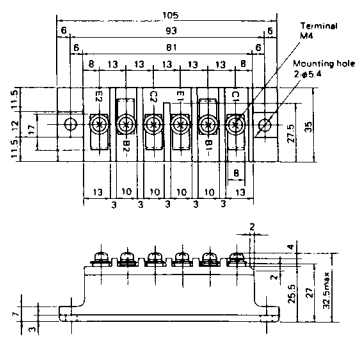
### M-116



M-201



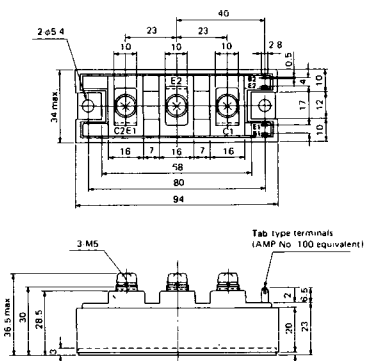
M-202



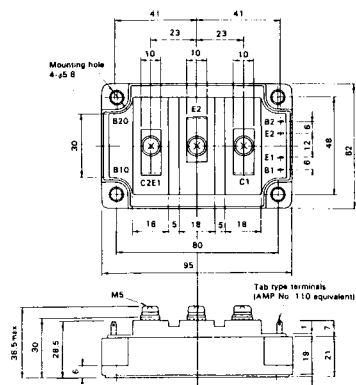
M-203



M-204



M-205



M-206



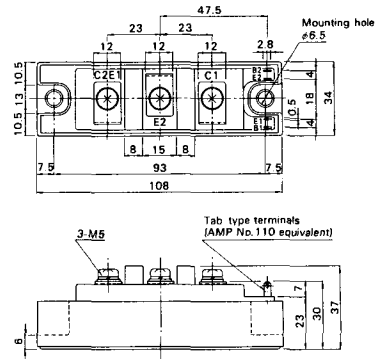
M-207



M-208



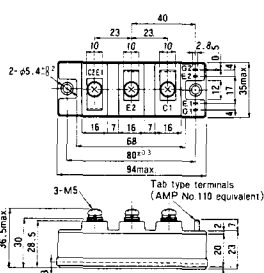
M-209



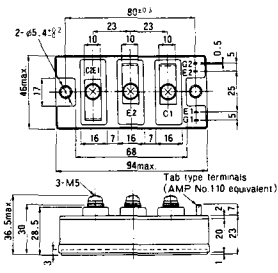
M-210



M-211



M-212



M-213

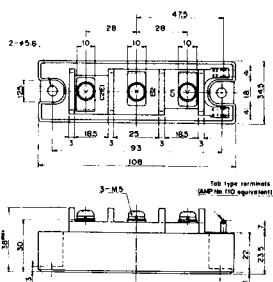


M-214

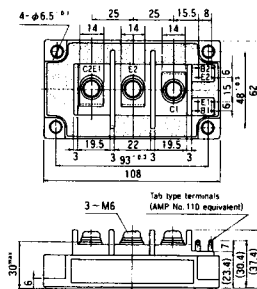
M-215



M-216



M-217



M-218



M-219

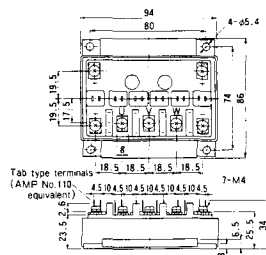




M-607



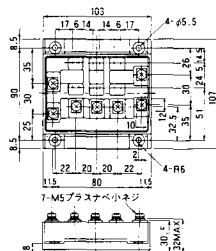
M-608



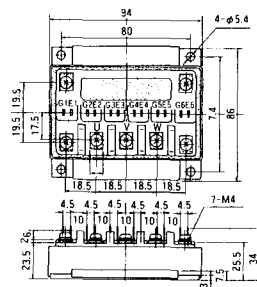
M-609



M-610



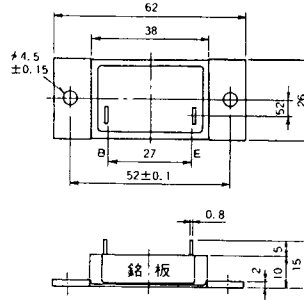
M-616



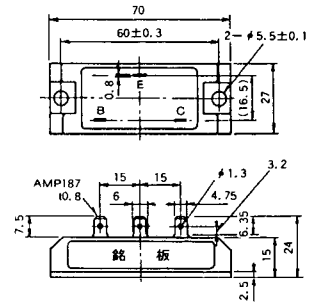
M-1A1A



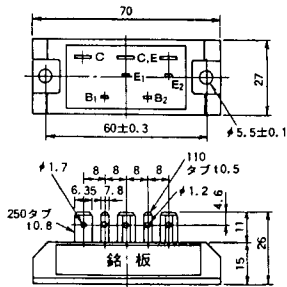
M-2A1A



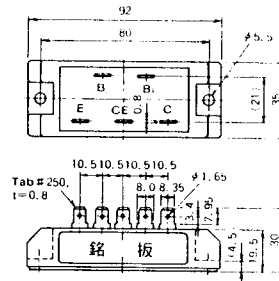
M-2B1A



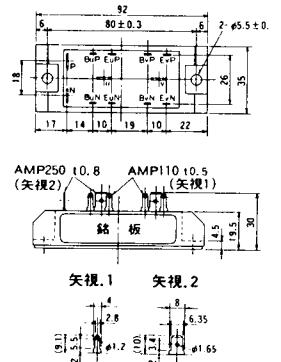
M-2B2A



M-2C2A



M-2D4A







M-3C1A



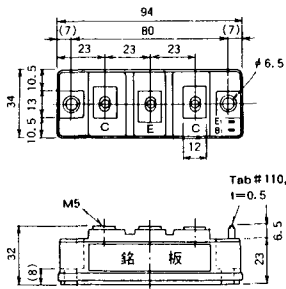
M-3D6A



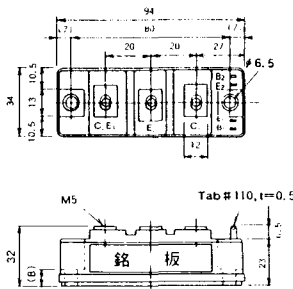
M-3E6A



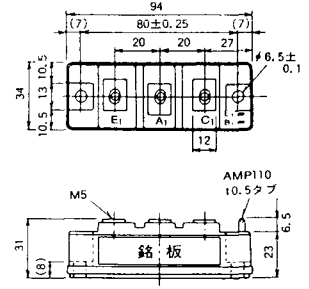
M-4A1A



M-4A2A



M-4A1B



M-4A2B



M-4B2A



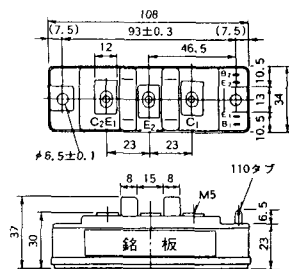
M-5A1A



M-5A1B



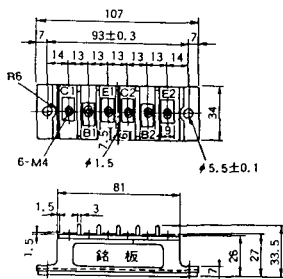
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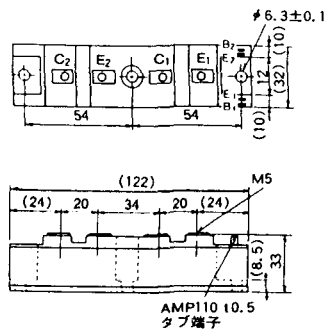
M-5B2A



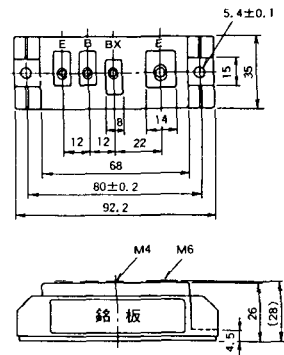
M-5C2A



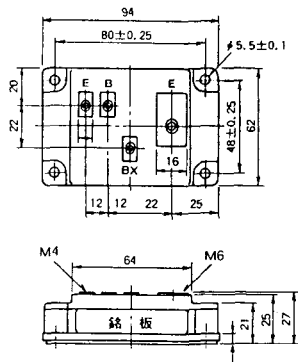
M-5D2A



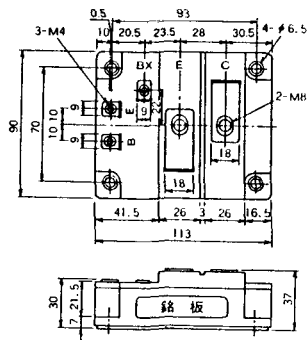
M-6A1A



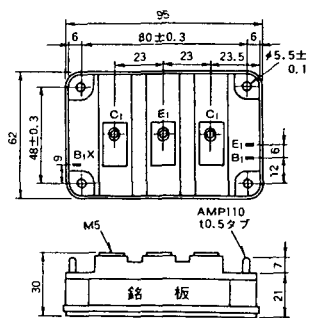
M-7A1A



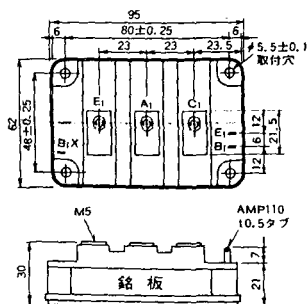
M-7B1A



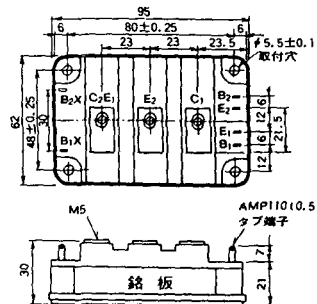
M-8A1A



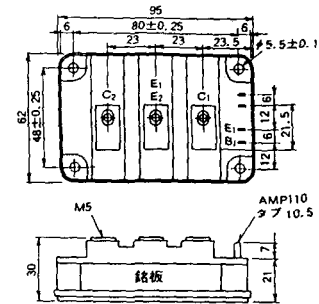
M-8A1B



M-8A2A



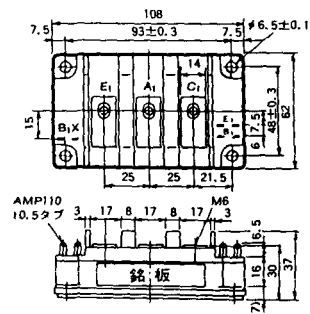
M-8A2B



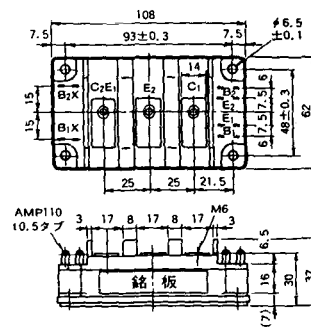
M-8B2A



M-9A1A



M-9A2A













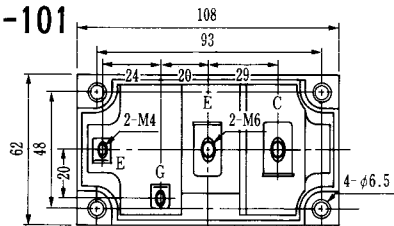
M-9D2B



M-10A2C

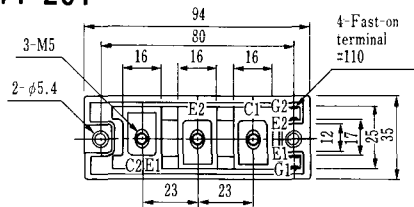


H-101



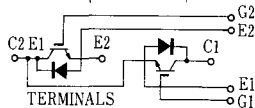
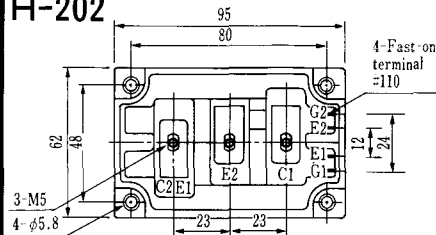
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### H-201



Weight: 200g

### H-202



Weight: 360g



