

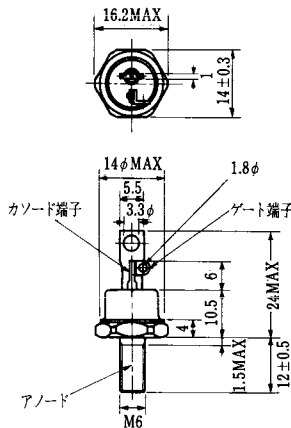
SG1000R22				■外形図番号 T-34 (13-66A1A)						
○ピーク線返しオフ電圧 1300V, 実効オン電流 250A				■電気的特性						
■最大定格				*1 スナバ回路, $R_s=20\Omega$ , $C_s=2\mu F$						
*2 $R_{GK}=20\Omega$										
記号	SG1000R22			単位	記号	測定条件	Min	Typ	Max	単位
$V_{RRM}$	100			V	$I_{RRM}$	$T_j=115^\circ C$ , $V_D=V_{RRM}^{*2}$			50	mA
$V_{DRM}$	1300			V	$I_{DRM}$	$T_j=115^\circ C$ , $V_D=V_{DRM}^{*2}$			50	mA
$I_{TQM}$	1000 *1			A	$V_{TM}$	$T_c=25^\circ C$ , $I_{TM}=1000A$			2.8	V
$I_{TRMS}$	250			A	$V_{GT}$	$T_c=25^\circ C$ , $V_D=12V$ ,			2.0	V
$I_{TSM}$	5000/5500 (50Hz/60Hz, 正弦半波1サイクル波高値)			A	$I_{GT}$	$R_L=1\Omega^{*2}$			350	mA
$I^2t$				A <sup>2</sup> S	$V_{GD}$	$T_c=115^\circ C$ , $V_D=\frac{1}{2}V_{DRM}^{*2}$	0.2			V
$di/dt$	200 ( $V_D=\frac{1}{2}V_{DRM}$ , $I_C=5A$ , $t_r\leq 1\mu s$ , $f=50Hz$ )			A/ $\mu s$	$I_{GD}$		10			mA
$P_{GFM}$	20			W	$V_{GQ}$	$I_r=1000A$ , $V_D=\frac{2}{3}V_{DRM}$		35		V
$P_{GRM}$	8000			W	$I_{GQ}$	$dv/dt=350V/\mu s$ , $T_c=110^\circ C$		250		A
$P_{GFAV}$	4			W	$dv/dt$	$T_j=115^\circ C$ , $V_D=\frac{2}{3}V_{DRM}^{*2}$	350			V/ $\mu s$
$V_{GRM}$	15			V	$I_H$	$T_c=25^\circ C$ , $R_L=2\Omega^{*2}$		5		A
$I_{GFM}$	10			A	$t_r$	$T_c=110^\circ C$ , $I_{TM}=1000A$			12	$\mu s$
$T_j$	115			$^\circ C$	$I_{kv}$	$I_{GR}=250A$ , $V_D=\frac{2}{3}V_{DRM}$			15	$\mu s$
$T_{JE}$	-40~115			$^\circ C$	$di_g/dt$	$di_g/dt=30A/\mu s^{*1}$				
					$R_{th}$	接合部-フィン間, DC			0.04	$^\circ C/W$

SG1000R, U, W, EX, 23				■外形図番号 T-47 (13-60E1A)							
○チョップパ, インバータ用				■電気的特性							
○400A, 1300V-2500V											
■最大定格											
記号	SG1000R23	SG1000U23	SG1000W23	SG1000EX23	単位	記号	測定条件	Min	Typ	Max	単位
$V_{RRM}$	15				V	$I_{RRM}$	$T_j=125^\circ C$ , $V_D=V_{RRM}$			100	mA
$V_{DRM}$	1300	1600	1800	2500		$I_{DRM}$	$T_j=125^\circ C$ , $V_D=V_{DRM}$ , $R_{GK}=20\Omega$			20	mA
$I_{TQM}$	1000 ( $V_D=\frac{1}{2}V_{DRM}$ , $V_{DM}=\frac{2}{3}V_{DRM}$ , $C_s=2\mu F$ , $R_s=20\Omega$ , $T_j=125^\circ C$ )					$V_{TM}$	$T_c=25^\circ C$ , $I_{TM}=1000A$			2.5	V
$I_{TRMS}$	400 ( $T_j=70^\circ C$ )				A	$V_{GT}$	$T_c=25^\circ C$ , $V_D=24V$		0.85	1.2	V
$I_{TSM}$	6500/7100 (50Hz/60Hz, 正弦半波1サイクル)					$I_{GT}$	$R_L=1\Omega$		600	1000	mA
$I^2t$					A <sup>2</sup> S	$V_{GD}$	$T_c=125^\circ C$ , $V_D=\frac{1}{2}V_{DRM}$	0.3			V
$di/dt$	250 ( $I_{GP}=18A$ , $t_r=1\mu s$ , $V_D=\frac{1}{2}V_{DRM}$ , $I_{TM}=1000A$ , $f=50Hz$ , $T_j=125^\circ C$ )				A/ $\mu s$	$I_{GD}$		5			mA
$I_{GFM}$	40 (パルス幅: max. 20 $\mu s$ , duty: max. 20%)				A	$t_d$	$T_c=25^\circ C$ , $V_D=\frac{1}{2}V_{DRM}$ , $I_{GP}=18A$			2.0	$\mu s$
$P_{GFAV}$	8				W	$t_{st}$	$I_{TM}=1000A$ , $di/dt=250A/\mu s$			8.0	
$I_{GRMS}$	50				A	$dv/dt$	$T_j=125^\circ C$ , $V_D=\frac{2}{3}V_{DRM}$ , $V_{GK}=-4V$	900			V/ $\mu s$
$P_{GRM}$	8000 (パルス幅: max. 20 $\mu s$ , duty: max. 2%)				W	$I_H$	$T_c=25^\circ C$ , $R_L=1\Omega$		10		A
$V_{GRM}$	15				V	$t_r$	$T_c=120^\circ C$ , $I_{TM}=1000A$			16	$\mu s$
$T_j$	125				$^\circ C$	$t_{kv}$	$V_D=\frac{1}{2}V_{DRM}$ , $V_{DM}=\frac{2}{3}V_{DRM}$			18	$\mu s$
$T_{JE}$	-40~125				$^\circ C$	$t_{val}$	$C_s=2\mu F$ , $R_s=20\Omega$			60	
						$I_{GR}$	$di_g/dt=-30A/\mu s$		240	280	A
						$R_{th}$	接合部-フィン間, DC			0.05	$^\circ C/W$

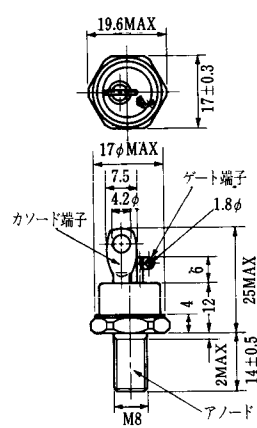
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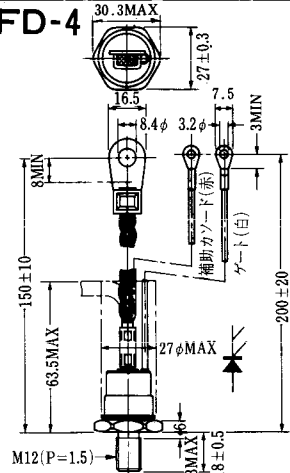
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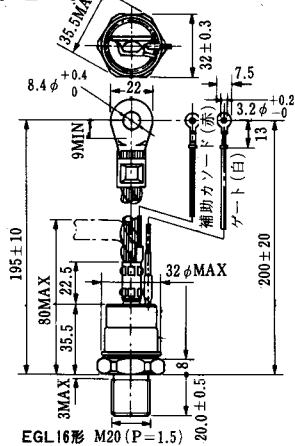
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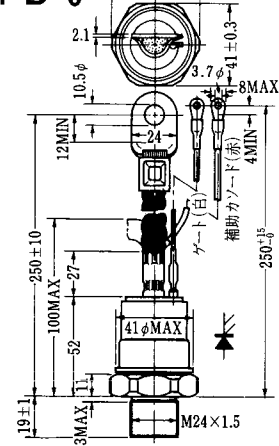
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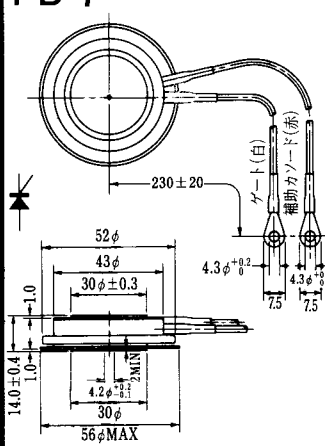
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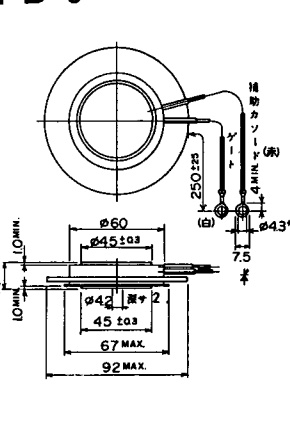
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FD-7



FD-8



FD-9

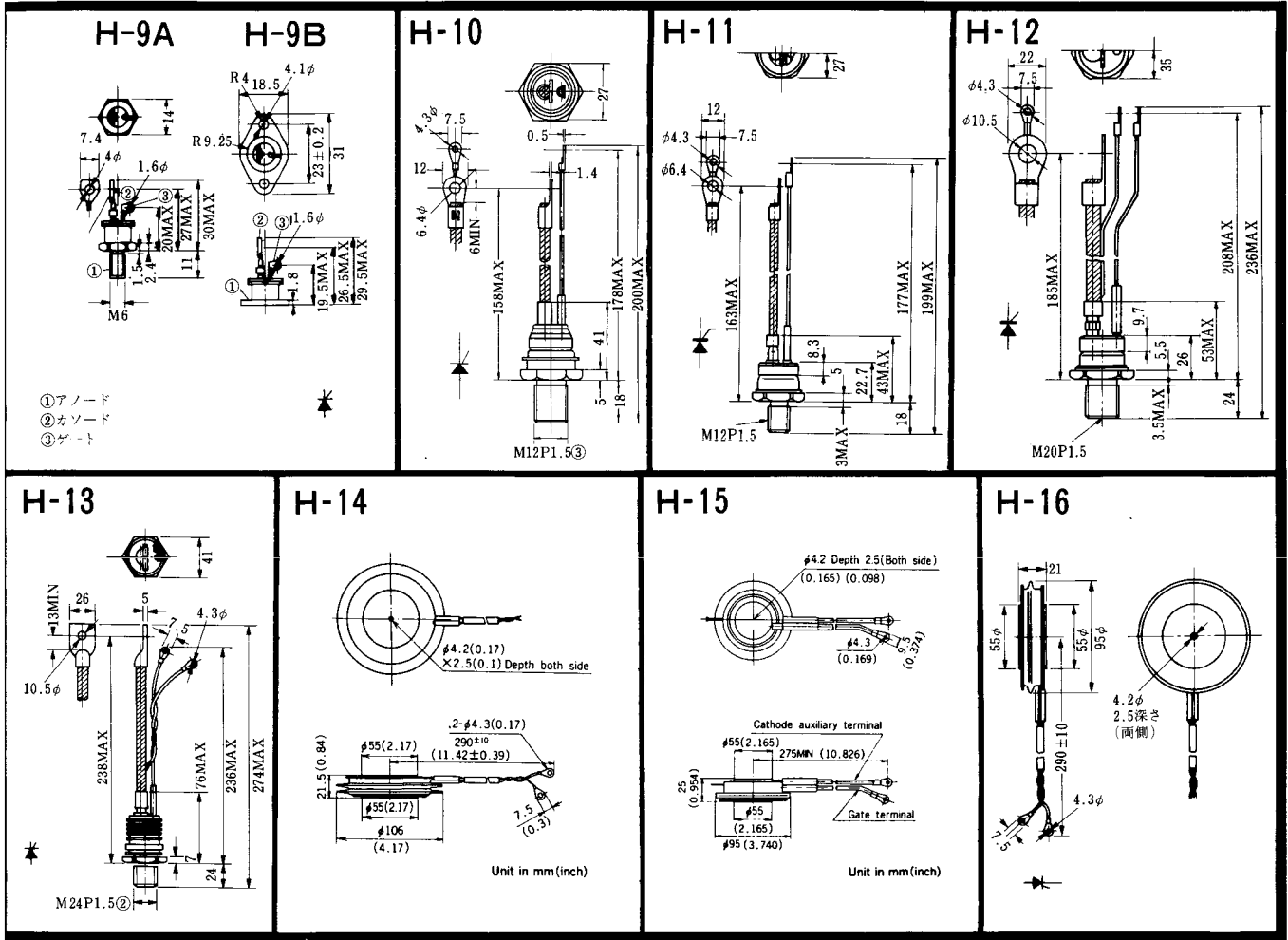


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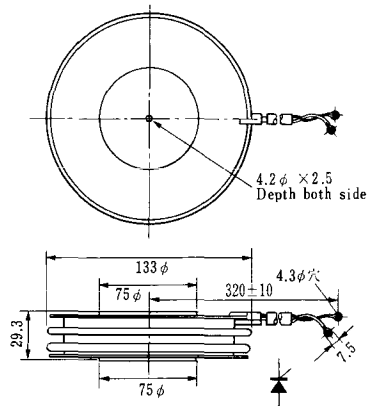


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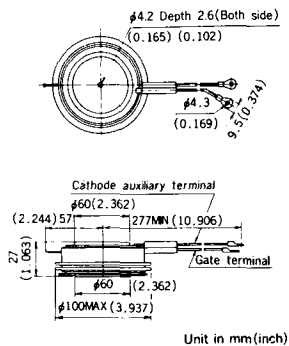




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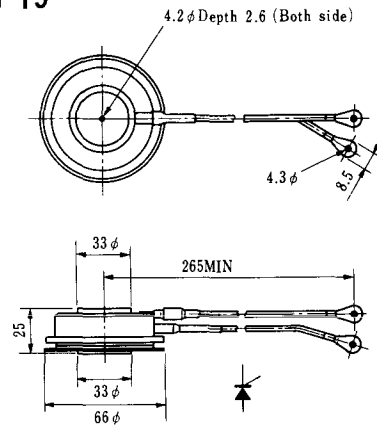


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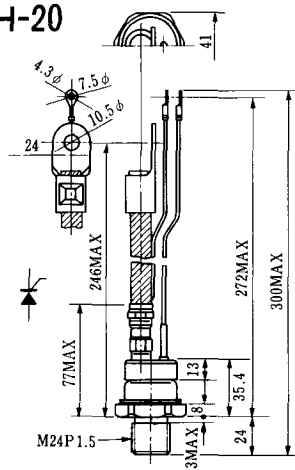


Unit in mm (inch)

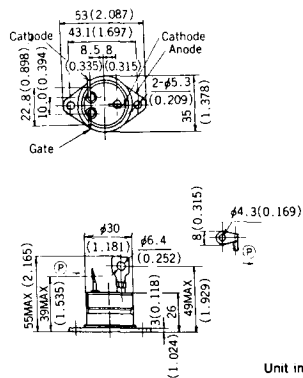
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### H-20

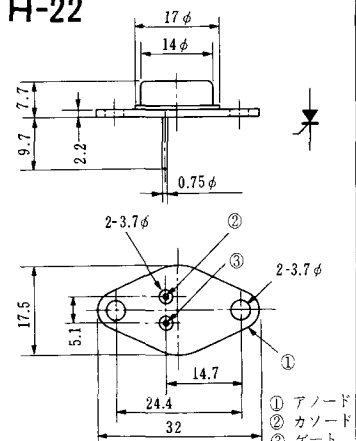


### H-21



Unit in mm (inch)

### H-22



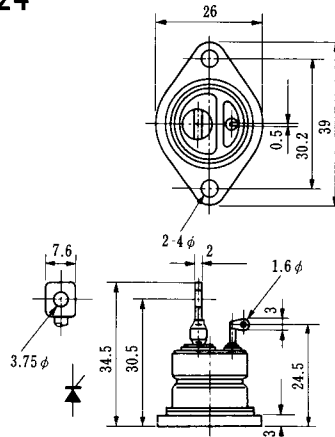
① アノード  
② カソード  
③ ゲート

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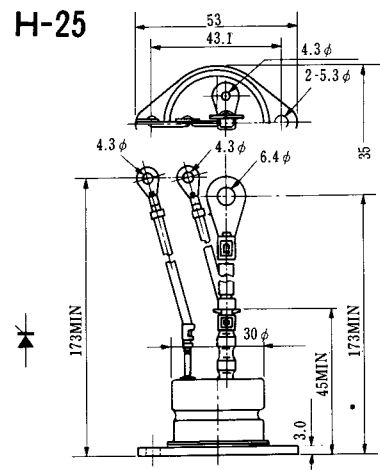


① アノード  
② カソード  
③ ゲート

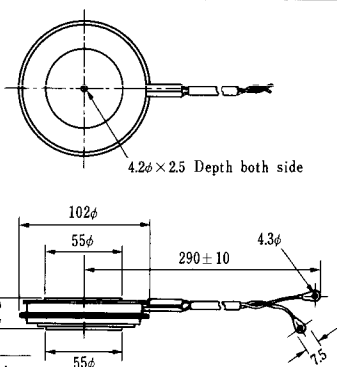
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### H-25



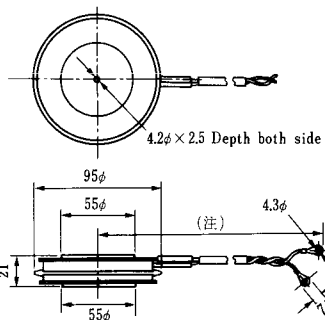
### H-26



Type	Direction of polarity
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CA12	
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### H-27

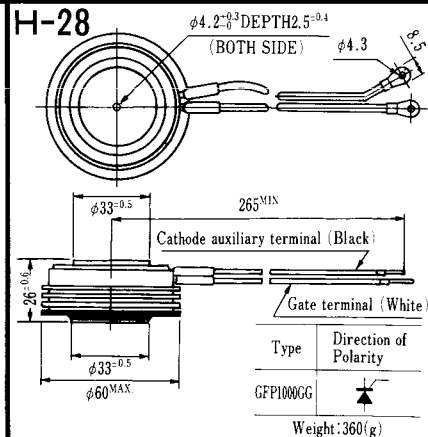


Type	Direction of polarity
------	-----------------------

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

### H-28

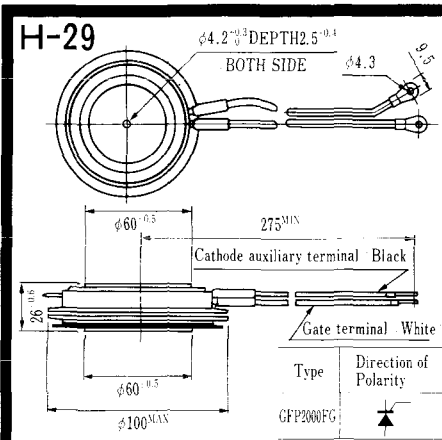


Type	Direction of Polarity
------	-----------------------

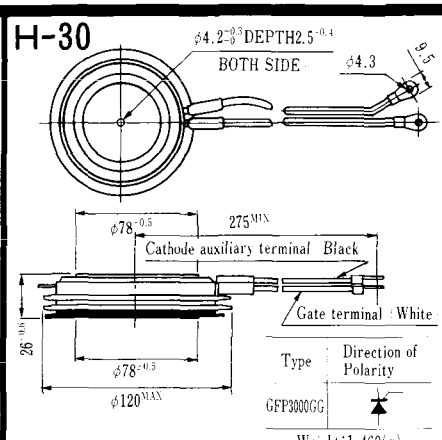
GFP100GG	
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Weight: 360(g)

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



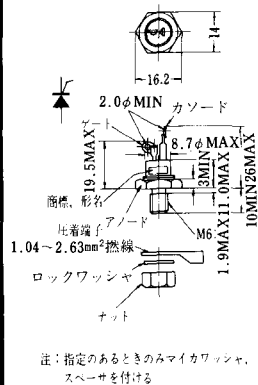
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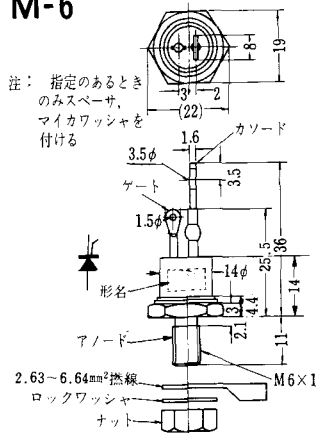
### M-4



### M-5



### M-6



### M-7



### M-8



M-9



M-10



M-11



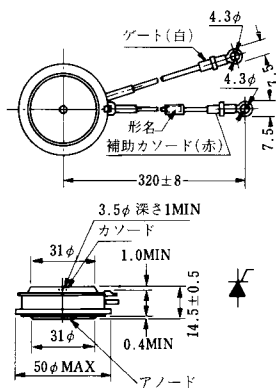
M-12



M-13



M-14



M-15



M-16





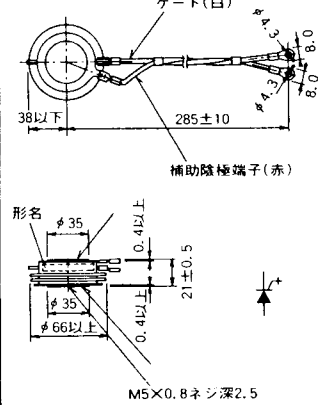
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M-26



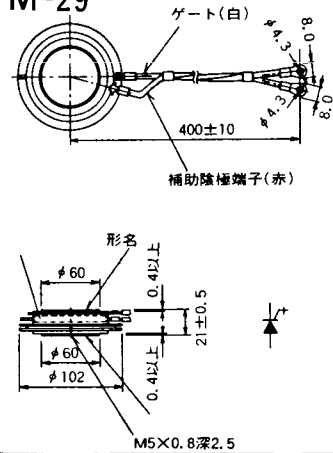
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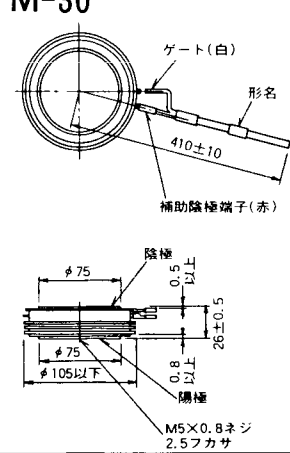
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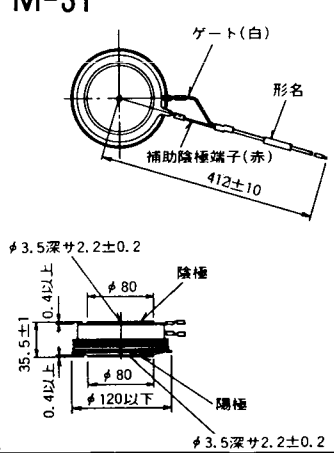
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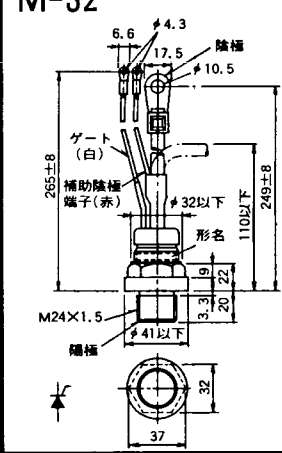
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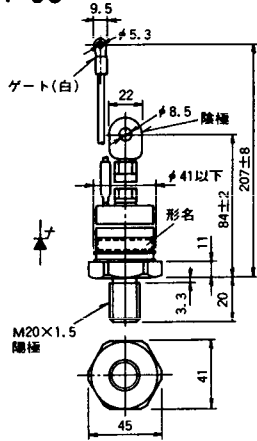
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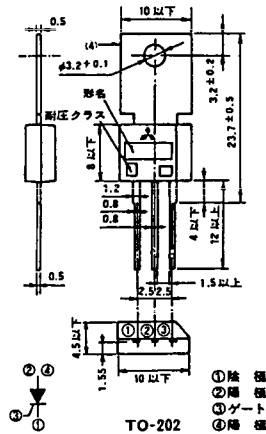
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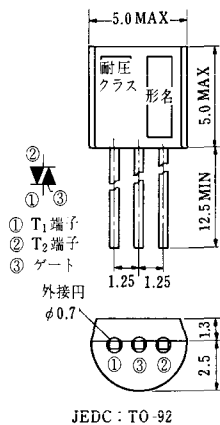
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### M-34



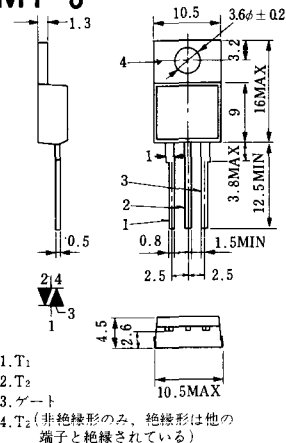
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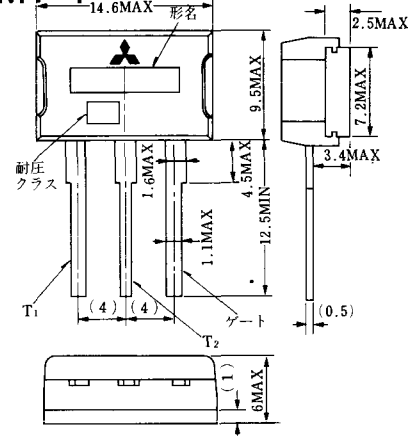
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### MT-3



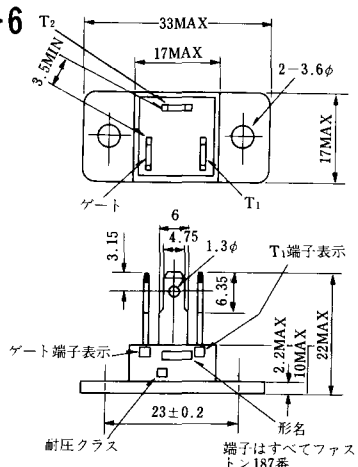
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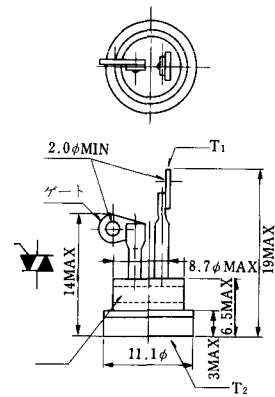
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### MT-6



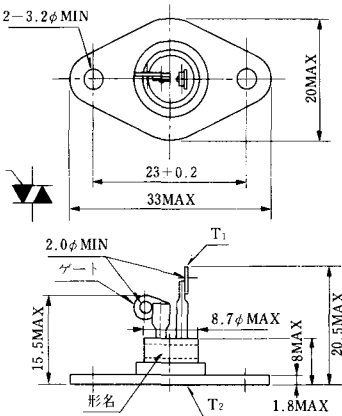
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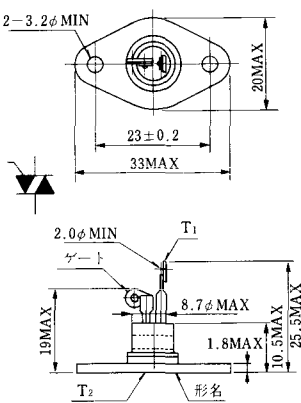
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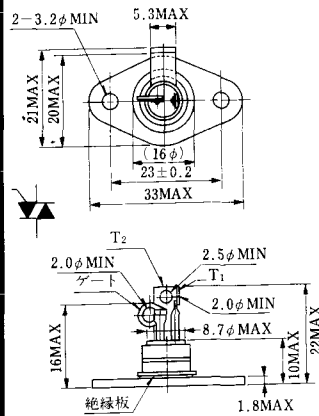
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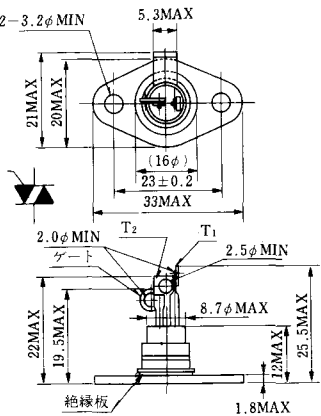
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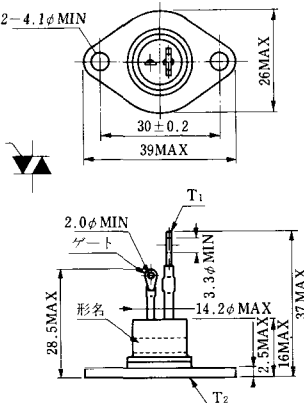
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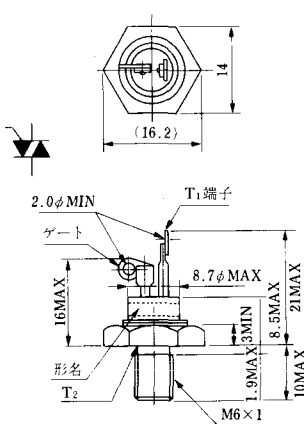
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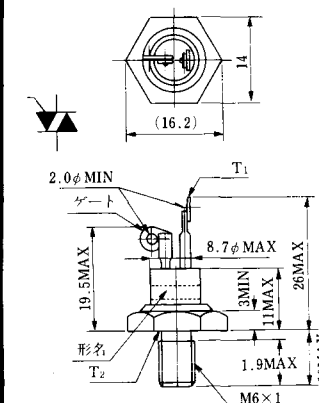
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MT-14

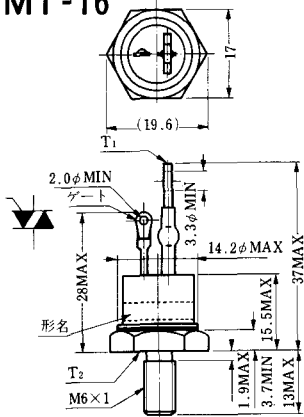


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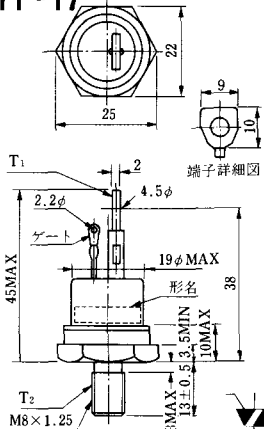




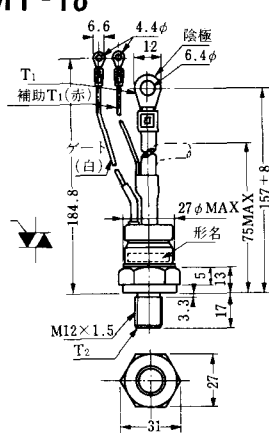
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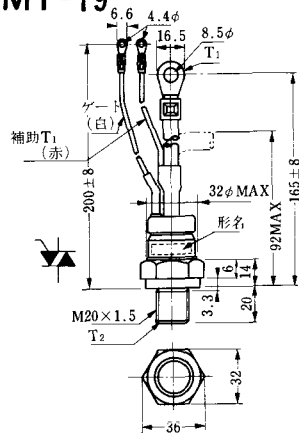
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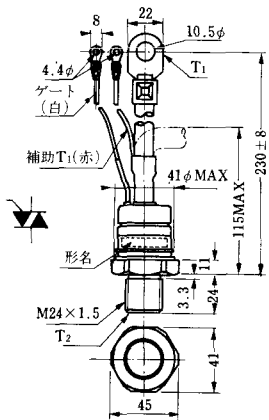
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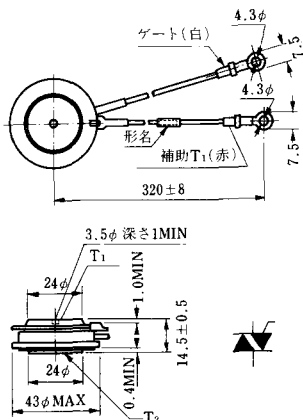
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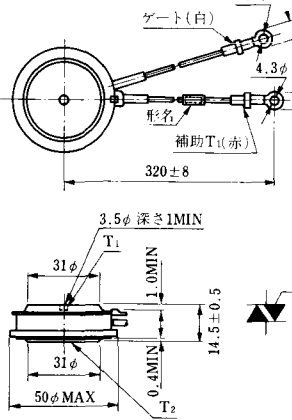
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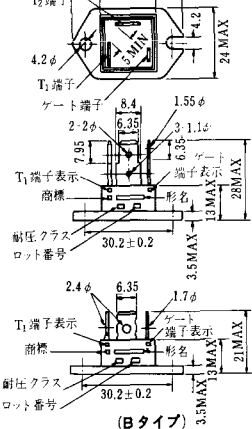
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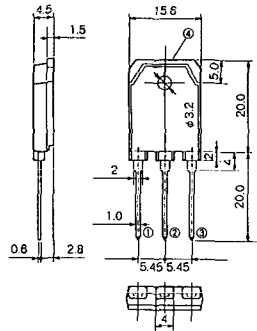
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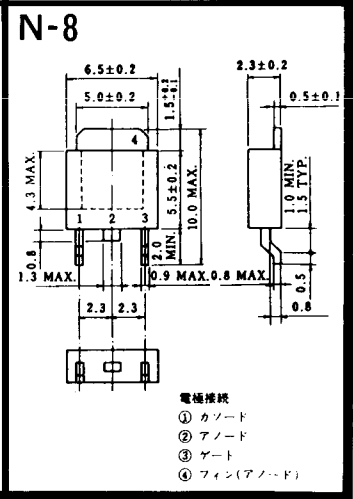
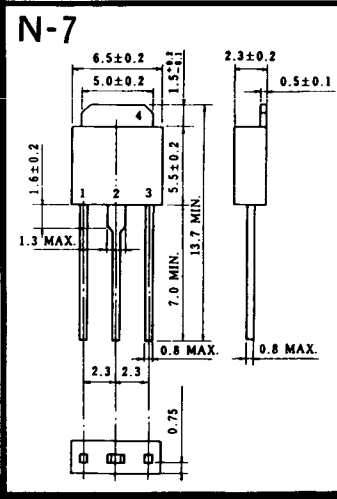
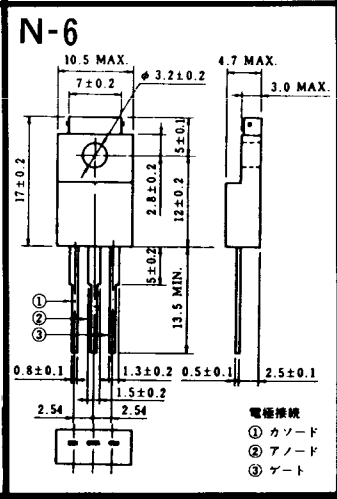
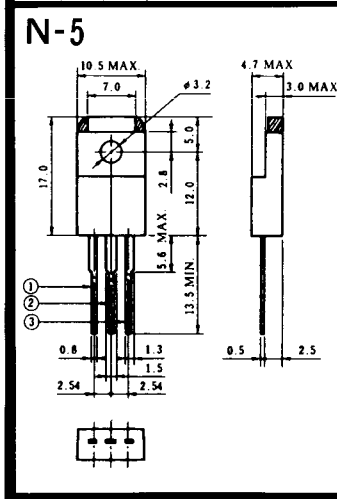
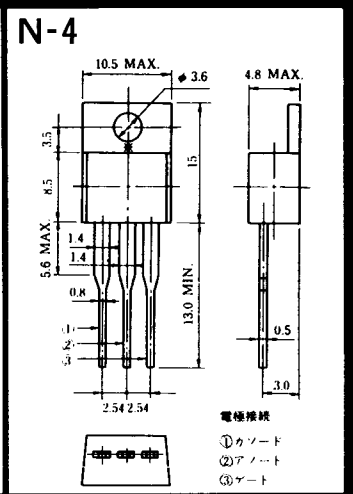
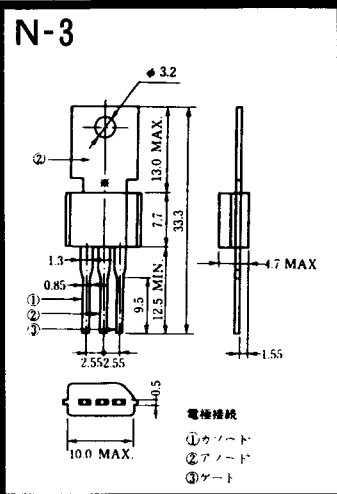
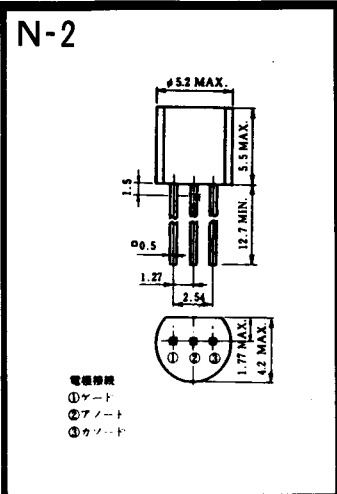
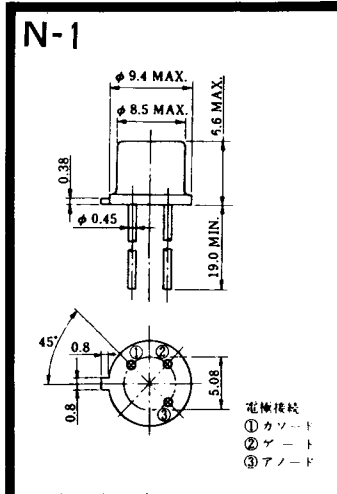
MT-23



# MT-24



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





### NA-1

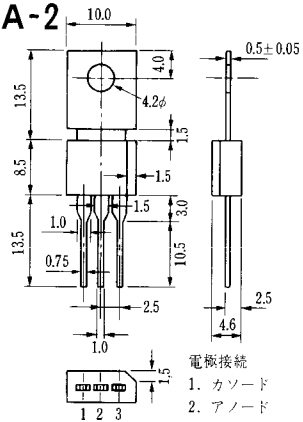


電極接続

1. ゲート
2. アノード
3. カソード

JEDEC: TO-92

### NA-2

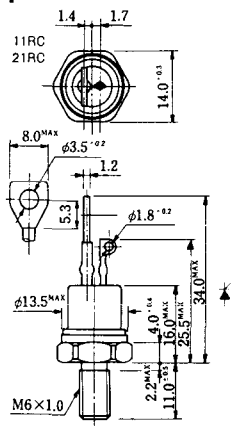


電極接続

1. カソード
2. アノード
3. ゲート

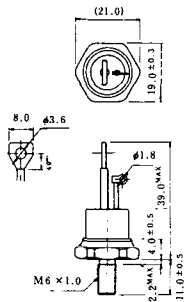
JEDEC: TO-202AA

### NI-1



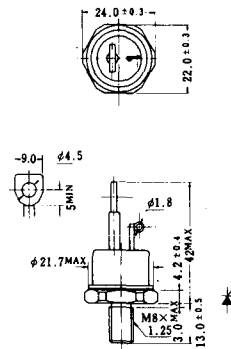
### NI-2

29RD



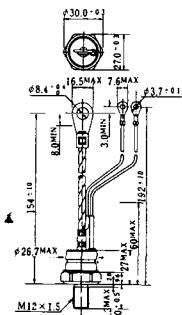
### NI-3

39RC  
59RC  
39RF  
59RF



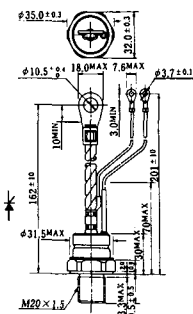
### NI-4

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



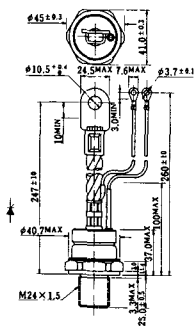
### NI-5

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



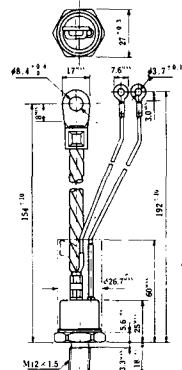
### NI-6

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



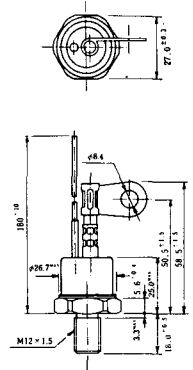
### NI-7

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

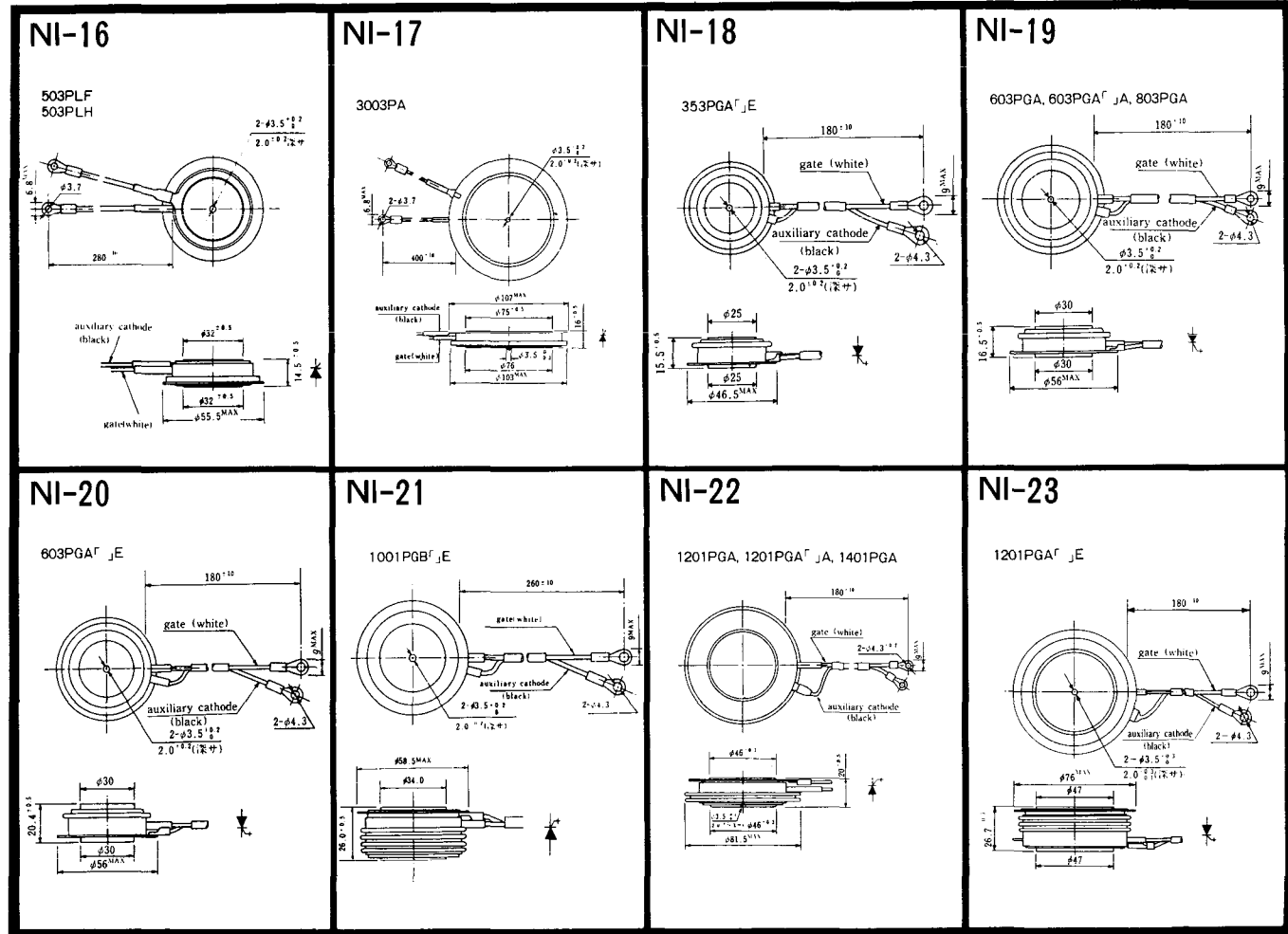


### NI-8

89RW  
129RW









NI-24

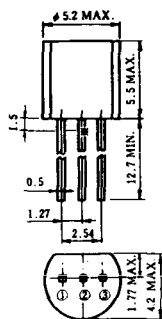
2001PGB<sup>r</sup> JE



NI-25

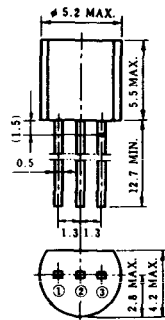
NI-26

### NT-1



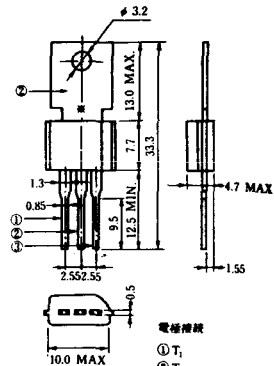
電極接続  
① T<sub>1</sub>  
② ゲート  
③ T<sub>2</sub>

### NT-2



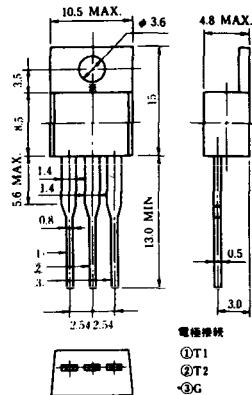
電極接続  
① T<sub>1</sub>  
② ゲート  
③ T<sub>2</sub>

### NT-3



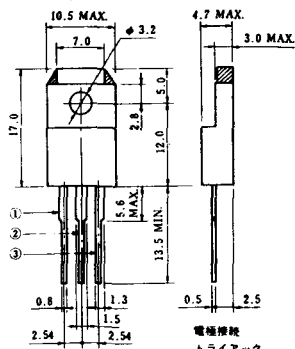
電極接続  
① T<sub>1</sub>  
② T<sub>2</sub>  
③ ゲート

### NT-4



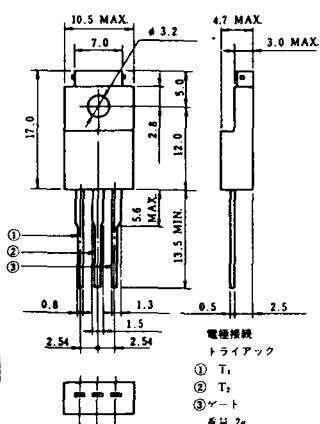
電極接続  
① T<sub>1</sub>  
② T<sub>2</sub>  
③ G

### NT-5



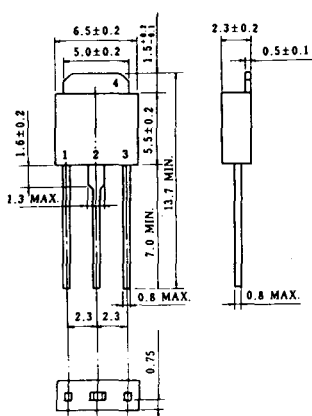
電極接続  
トライアック  
① T<sub>1</sub>  
② T<sub>2</sub>  
③ ゲート  
φ 2g

### NT-6

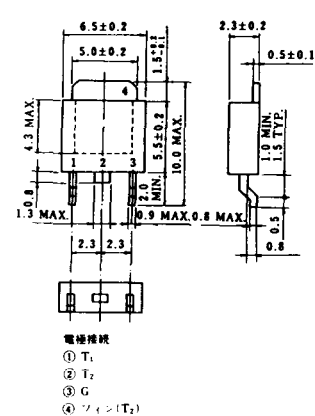


電極接続  
トライアック  
① T<sub>1</sub>  
② T<sub>2</sub>  
③ ゲート  
φ 2k

### NT-7

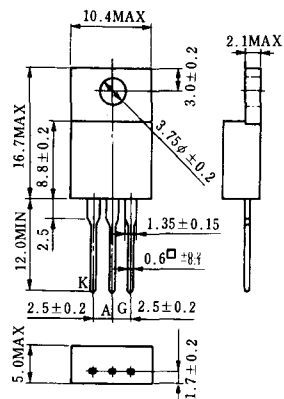


### NT-8

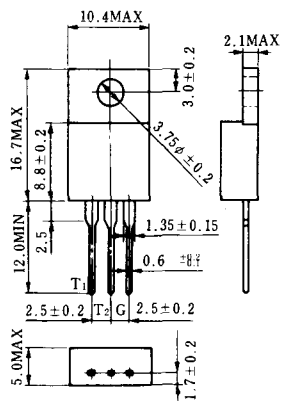


電極接続  
① T<sub>1</sub>  
② T<sub>2</sub>  
③ G  
④ シェン(T<sub>2</sub>)

### S-1



### ST-1



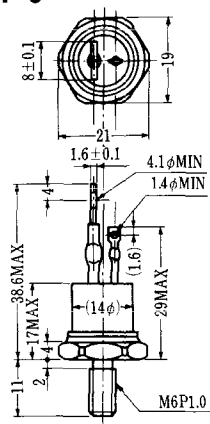
SA-1



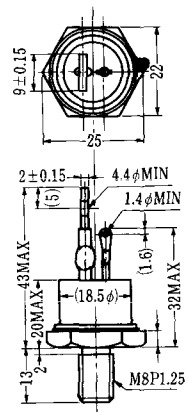
SA-2



SA-3



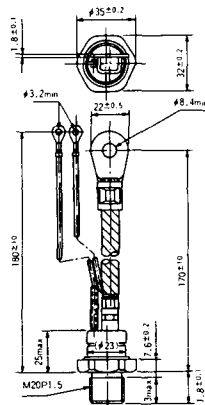
SA-4



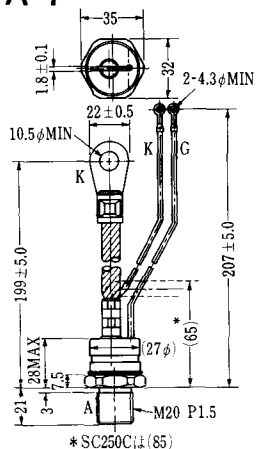
SA-5



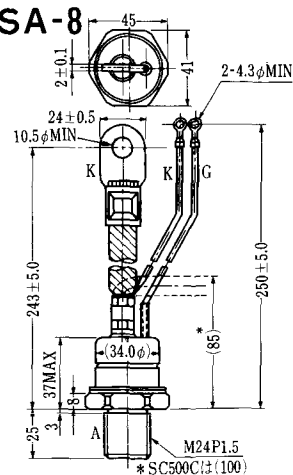
SA-6



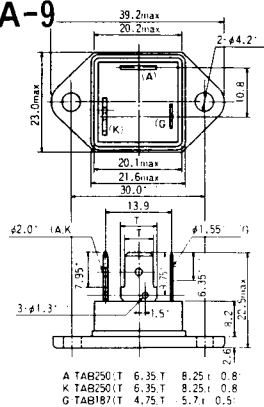
SA-7



SA-8



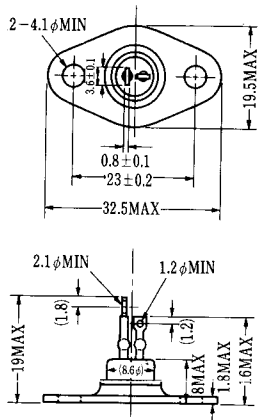
### SA-9



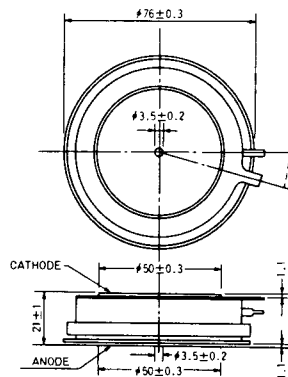
A TAB250(T) 6.35 T 8.25 I 0.8  
 K TAB250(T) 6.35 T 8.25 I 0.8  
 G TAB187(T) 4.75 T 5.7 I 0.5



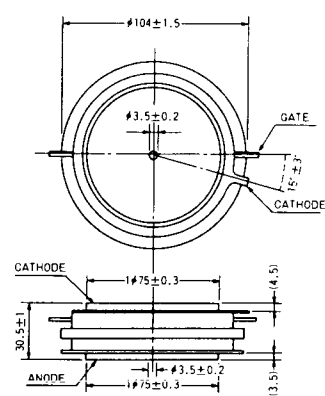
### SA-10



### SA-11



### SA-12

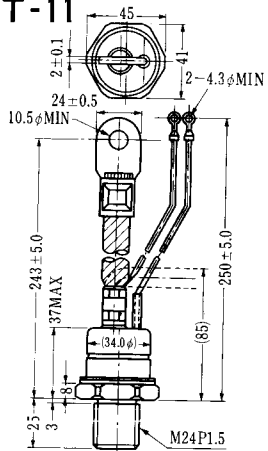




SAT-10



SAT-11

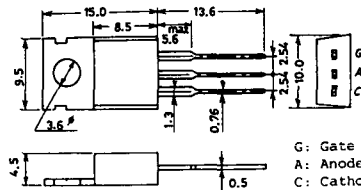


### SY-1 (1096A)



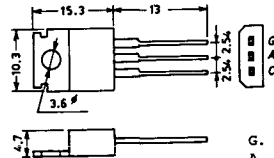
C: Cathode  
A: Anode  
G: Gate

### SY-2 (1151)



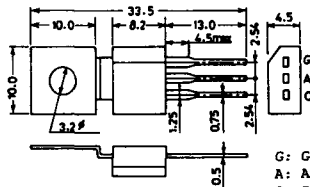
G: Gate  
A: Anode  
C: Cathode

### SY-3 (1104)



G: Gate  
A: Anode  
C: Cathode

### SY-4 (1150)



G: Gate  
A: Anode  
C: Cathode

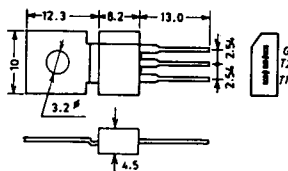


1097A

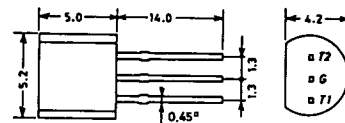


G: Gate

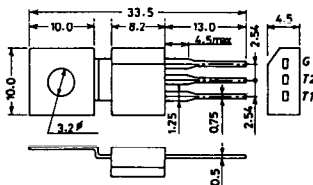
1102



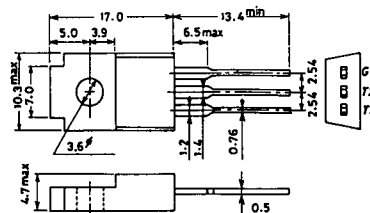
1141



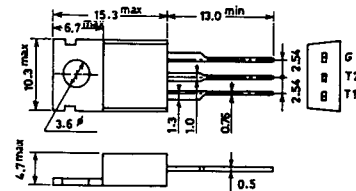
1142



1144



1155

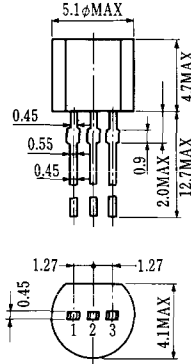


1192A



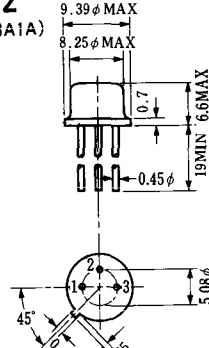
G: Gate

**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)

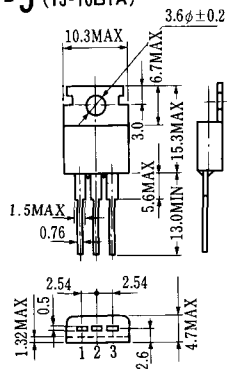
**T-3 (13-8C1A)**



M5×0.8  
アノード

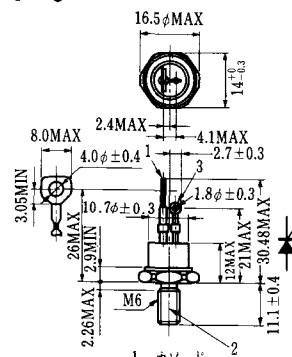
- 1 カソード
- 2 アノード
- 3 ゲート

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



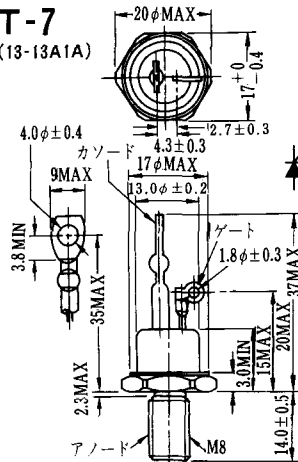
- 1 カソード
- 2 アノード
- 3 ゲート

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



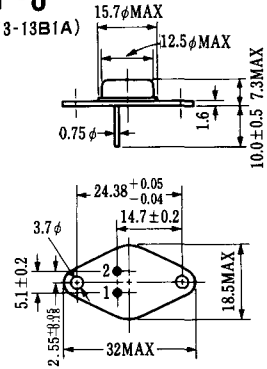
- 1 カソード
- 2 アノード
- 3 ゲート

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



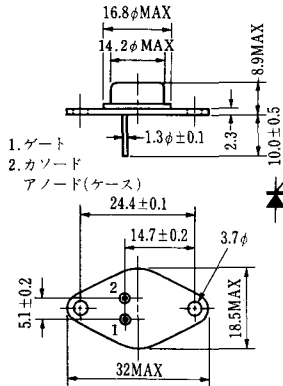
アノード  
M8

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



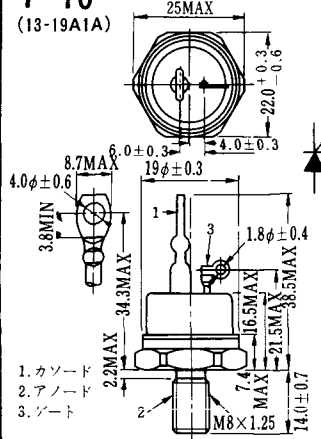
1. ゲート
2. カソード
3. アノード(ケース)

### T-9 (13-14A1A)



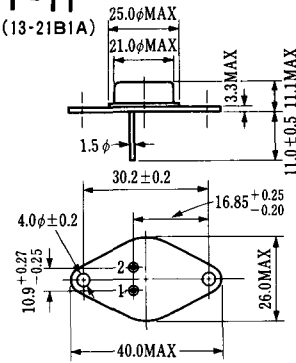
1. ゲート
2. カソード
- アノード(ケース)

### T-10 (13-19A1A)



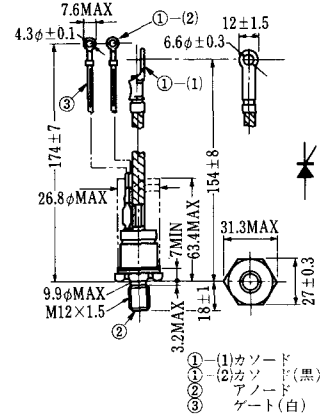
1. カソード
2. アノード
3. ゲート

### T-11 (13-21B1A)



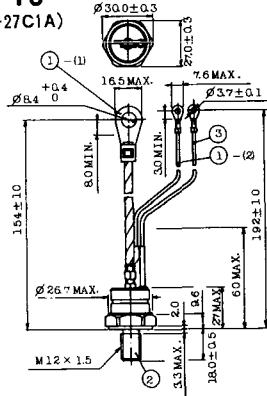
1. ゲート
2. カソード
- アノード(ケース)

### T-12 (13-27B1B)



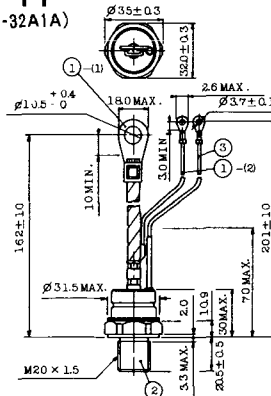
- ① (1) カソード
- ① (2) カソード(黒)
- ② アノード
- ③ ゲート(白)

### T-13 (13-27C1A)



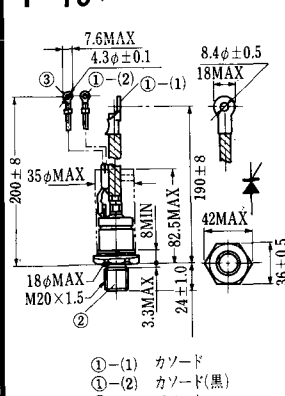
- 1-(1) カソード
- 1-(2) カソード(黒)
- 2 アノード
- 3 ゲート(白)

### T-14 (13-32A1A)



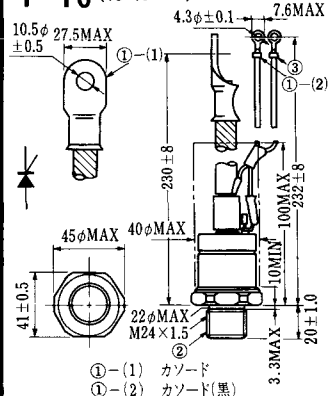
- 1-(1) カソード
- 1-(2) カソード(黒)
- 2 アノード
- 3 ゲート(白)

### T-15 (13-35C1B)



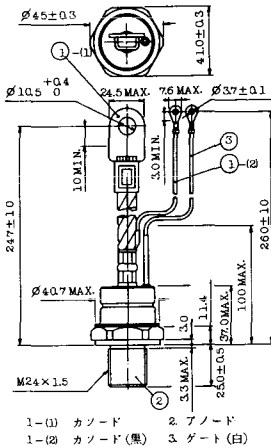
- ① (1) カソード
- ① (2) カソード(黒)
- ② アノード
- ③ ゲート(白)

### T-16 (13-40B1A)

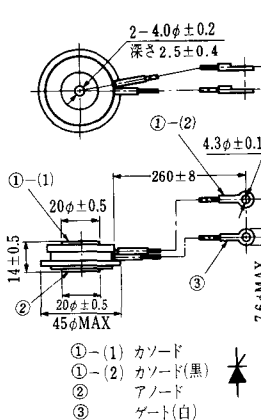


- ① (1) カソード
- ① (2) カソード(黒)
- ② アノード
- ③ ゲート(白)

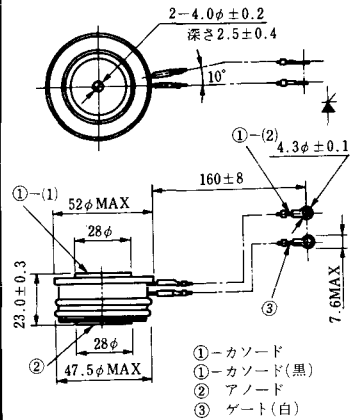
**T-17 (13-42A1A)**



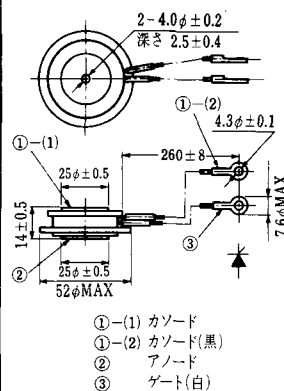
**T-18 (13-45D1A)**



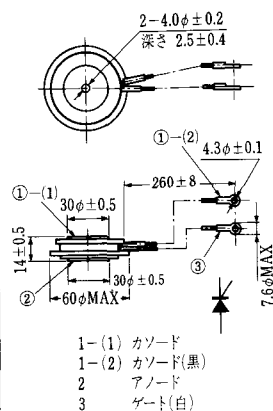
**T-19 (13-52B1A)**



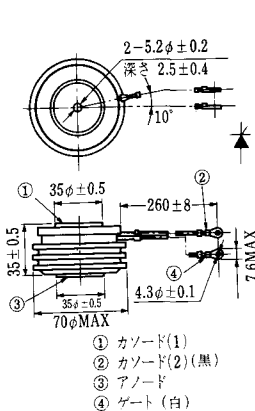
**T-20 (13-52C1A)**



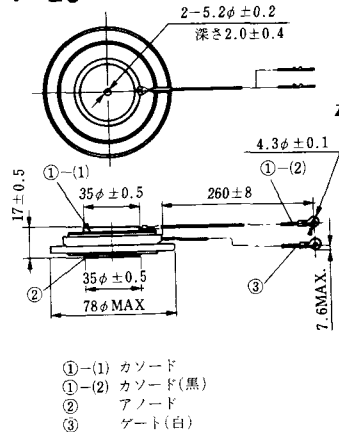
**T-21 (13-60A1A)**



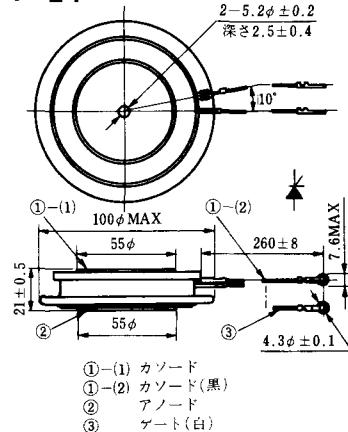
**T-22 (13-70C1A)**



**T-23 (13-78A1A)**

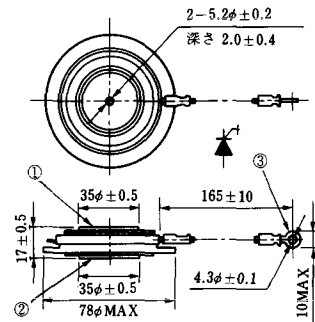


**T-24 (13-100C1A)**



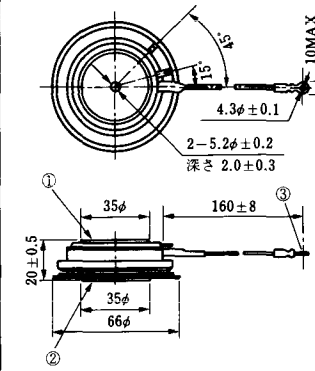


**T-33** (13-78B1A)



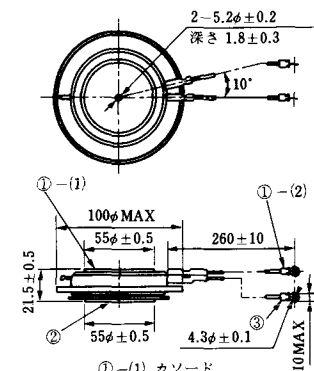
- ① カソード
- ② アノード
- ③ ゲート

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



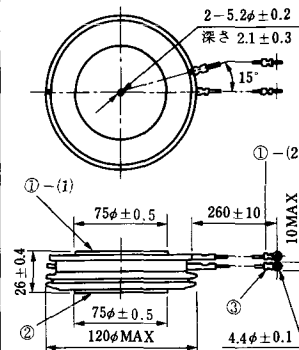
- ① カソード
- ② アノード
- ③ ゲート

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



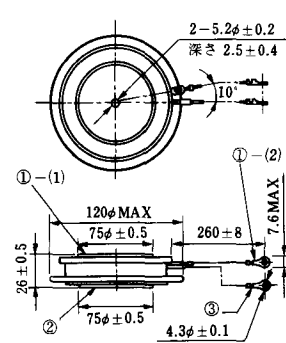
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

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



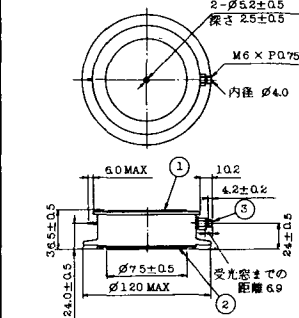
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

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



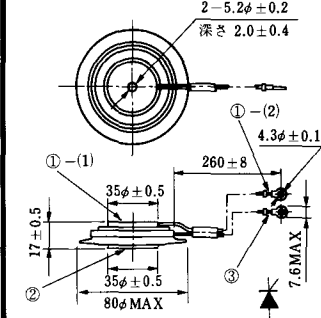
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

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



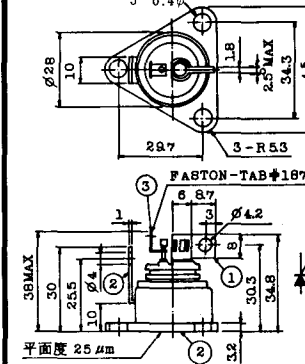
- ① カソード
- ② アノード
- ③ ゲート

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



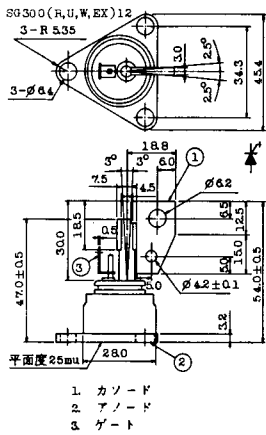
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

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

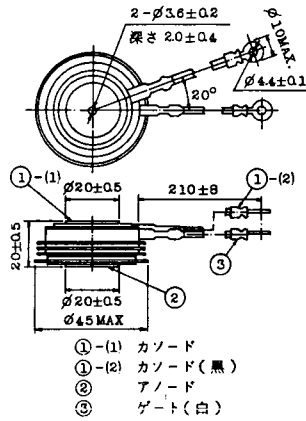


- 1. カソード
- 2. アノード
- 3. ゲート

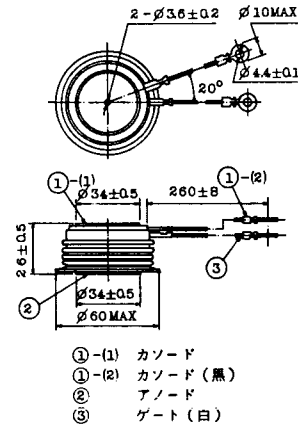
### T-41 (13-28A2A)



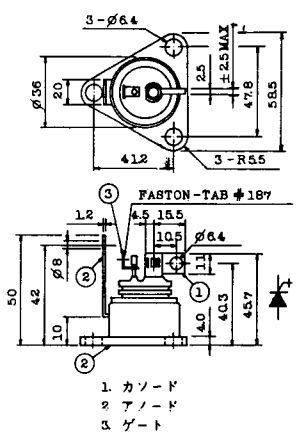
### T-42 (13-45F1A)



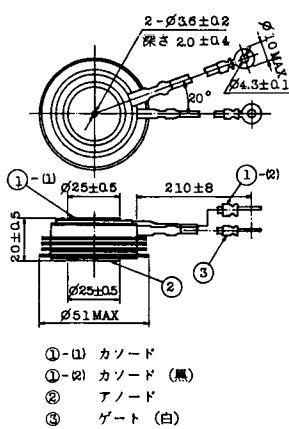
### T-43 (13-60E2A)



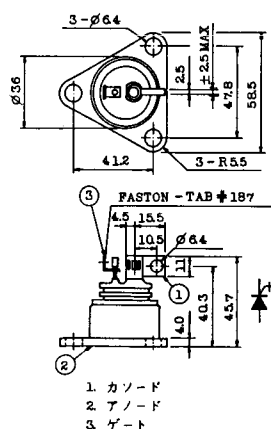
### T-44 (13-36A1A)



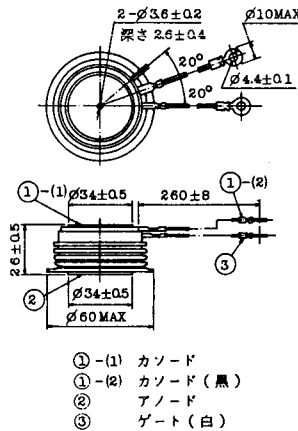
### T-45 (13-51B1A)



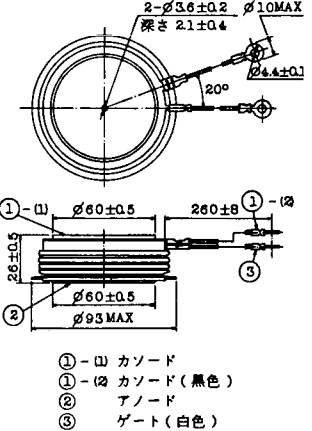
### T-46 (13-36B1A)



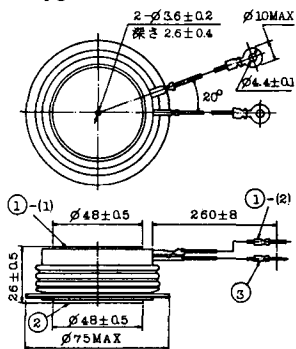
### T-47 (13-60E1A)



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



**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)



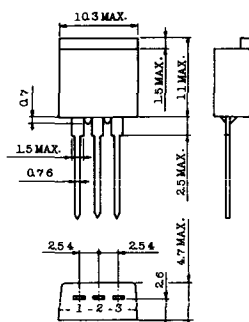
- 1 カソード  
2 アノード  
3 ゲート

**T-51** (13-10D1A)



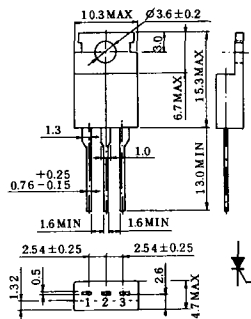
- 1 カソード  
2 アノード  
3 ゲート

**T-52** (13-10D2A)



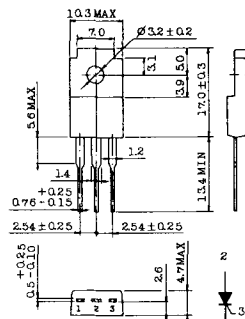
- 1 カソード  
2 アノード  
3 ゲート

**T-53** (13-10E1B)



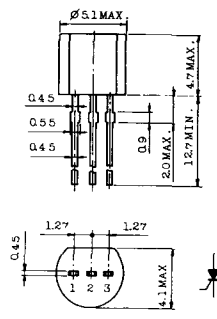
- 1 カソード  
2 アノード  
3 ゲート

**T-54** (13-10F1B)



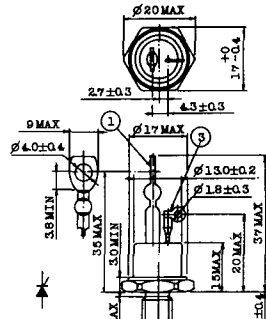
- 1 カソード  
2 アノード  
3 ゲート

**T-55** (13-5A1D)



- 1 カソード  
2 アノード  
3 アノード

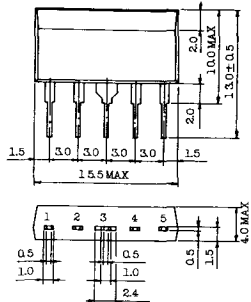
**T-56** (13-13C1A)



- 1 カソード  
2 アノード  
3 ゲート



T-57 (12-16C1A)



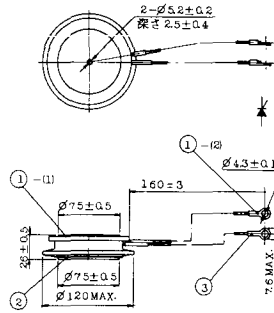
1. アノード (主)
2. ゲート (主)
3. カソード (共通)
4. ゲート (補助)
5. アノード (補助)

T-58 (13-10H1B)



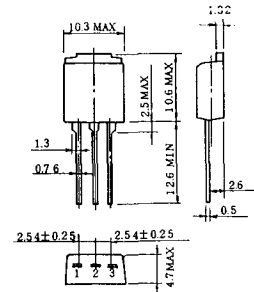
1. カソード
2. アノード
3. ゲート

T-59 (13-120A1A)



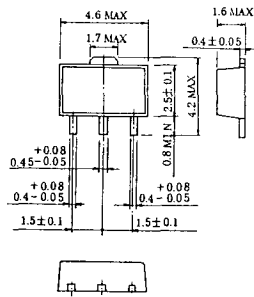
- 1-1) カソード
- 1-12) カソード (黒)
- 2) アノード
- 3) ゲート (白)

T-60



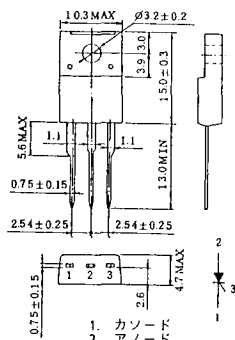
1. カソード
2. アノード
3. ゲート

T-61 (13-5B1A)



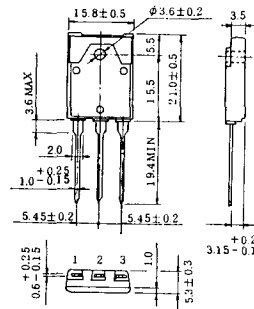
1. ゲート
2. アノード
3. カソード

T-62 (13-10H1A)



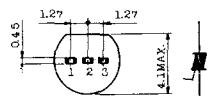
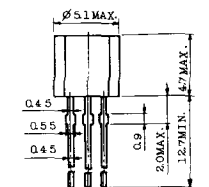
1. カソード
2. アノード
3. ゲート

T-63 (13-16A1B)



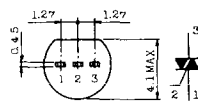
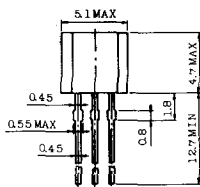
1. カソード
2. アノード
3. ゲート

TT-1



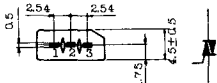
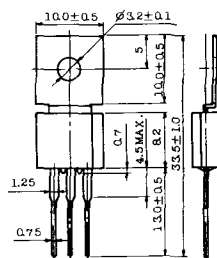
- 1 ゲート
- 2 T<sub>2</sub>
- 3 T<sub>1</sub>

TT-2



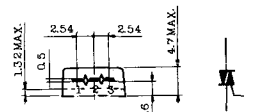
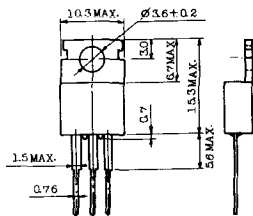
- 1 T<sub>1</sub>
- 2 ゲート
- 3 T<sub>2</sub>

TT-3



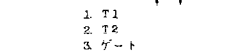
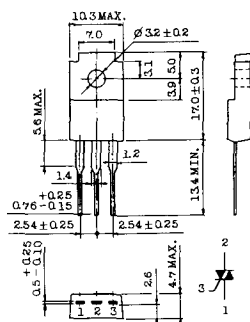
- 1 T<sub>1</sub>
- 2 T<sub>2</sub>
- 3 ゲート

TT-4



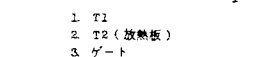
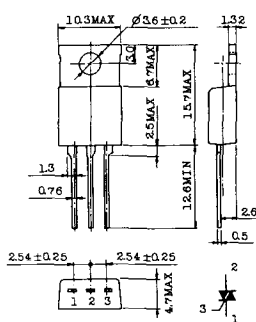
- 1 T<sub>1</sub>
- 2 T<sub>2</sub>
- 3 ゲート

TT-5



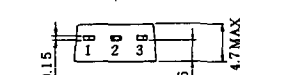
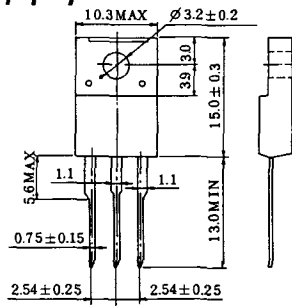
- 1 T<sub>1</sub>
- 2 T<sub>2</sub>
- 3 ゲート

TT-6



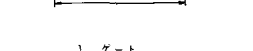
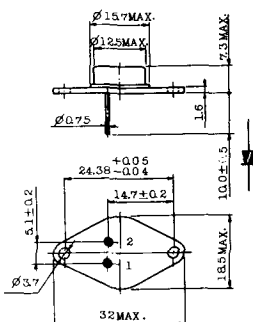
- 1 T<sub>1</sub>
- 2 T<sub>2</sub> (放熱板)
- 3 ゲート

TT-7



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

TT-8

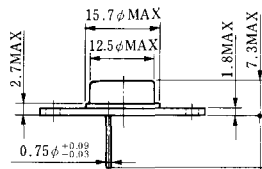


- 1 ゲート
- 2 T<sub>1</sub>
- T<sub>2</sub> (ケース)





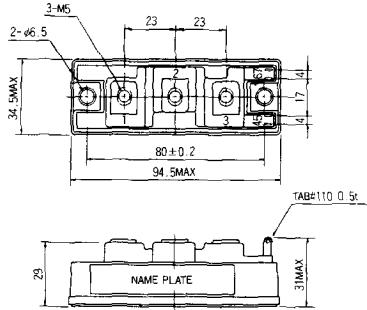
# TS-8



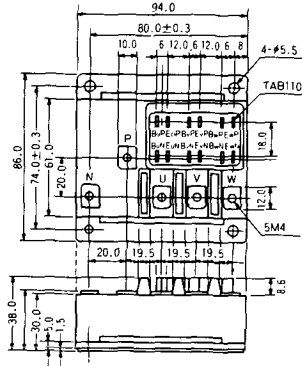
- 1. ベース
- 2. エミッタ  
コレクタ  
(ケース)



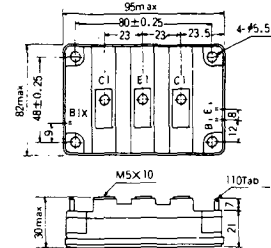
S-94B2A



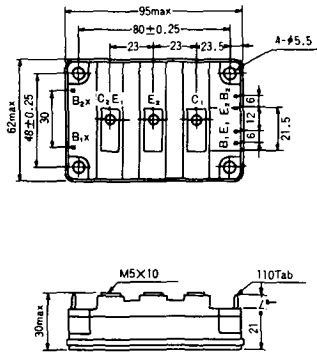
S-94D1A



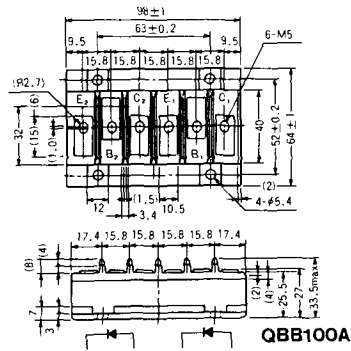
S-95A1A



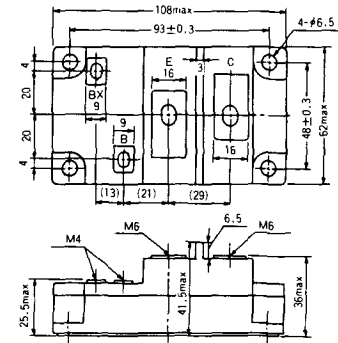
S-95B1A



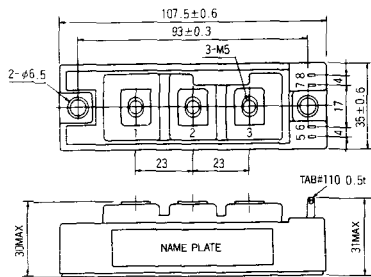
S-98B1B



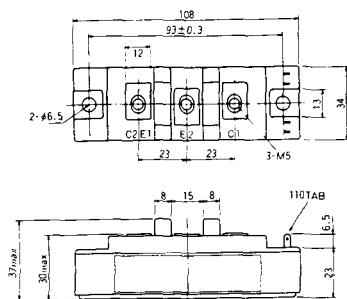
S-108A2A



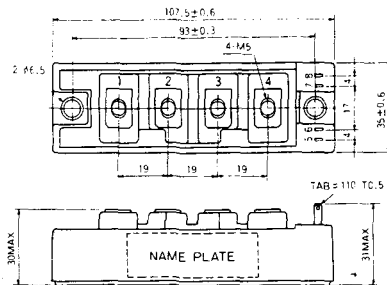
S-108B1A



S-108B1B



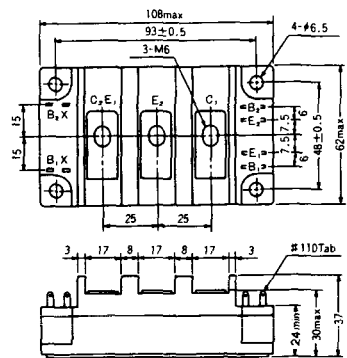
S-108B1C



S-108B2A



S-108B2B





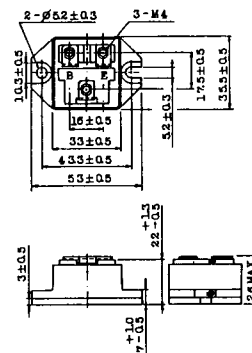
### 2-22B1A



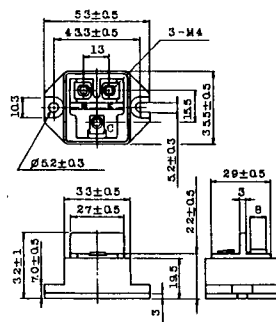
### 2-27A4A



### 2-33C1A



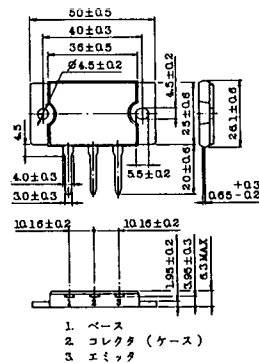
### 2-33D1A



### 2-33F1A



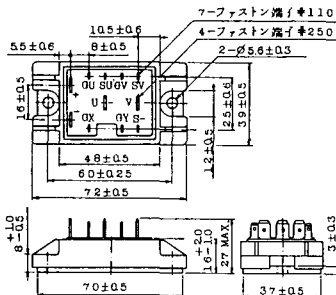
### 2-37A1A



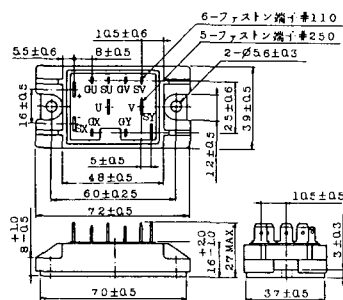
2-48A3A



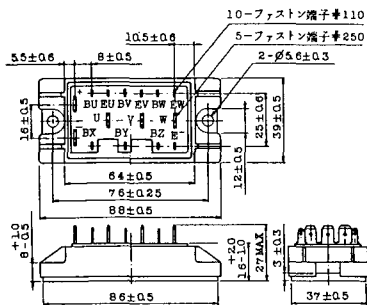
2-48A3B



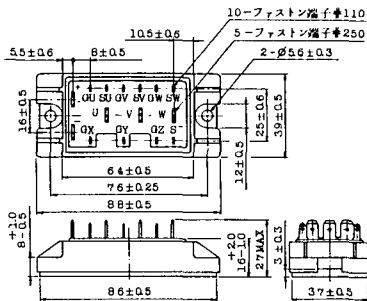
2-48A4A



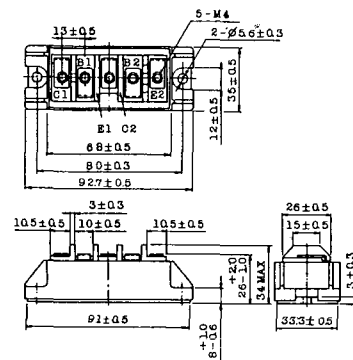
2-64A2A



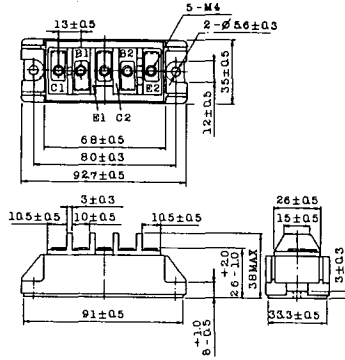
2-64A2B



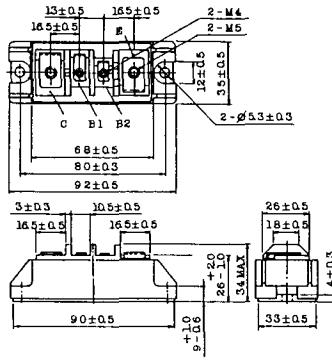
2-68A2A



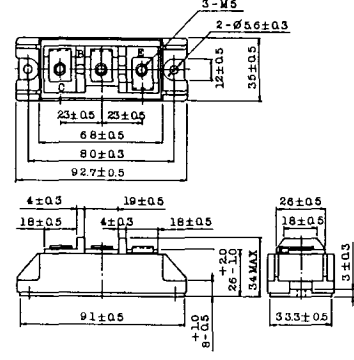
### 2-68B2A



### 2-68C1A



### 2-68D2A



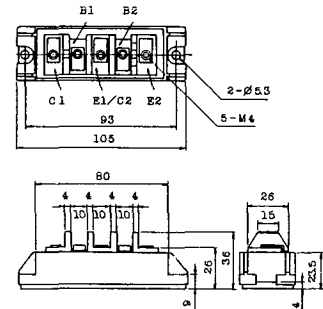
### 2-72A3A



### 2-80A1A

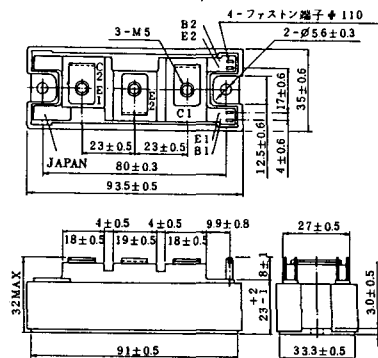


### 2-80B1A

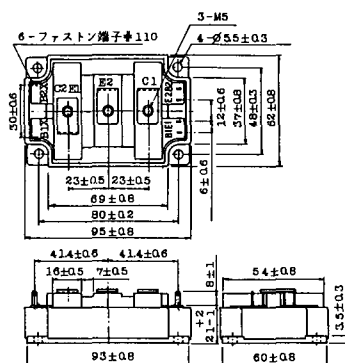




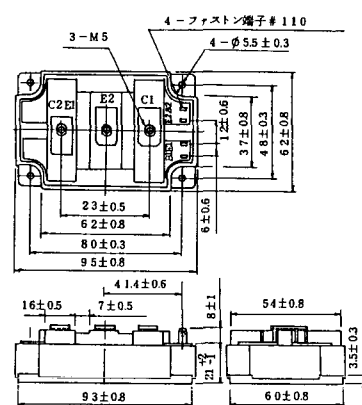
### 2-94D1A



### 2-96A3A



### 2-96A4A



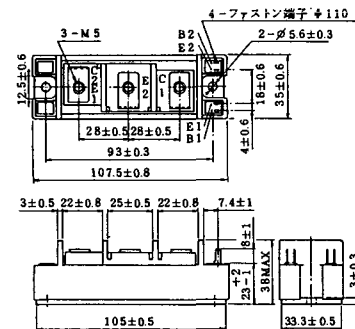
### 2-98B1A



### 2-98C2A



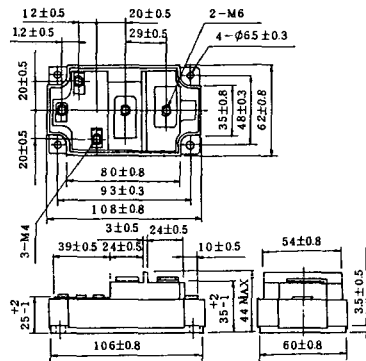
### 2-108A2A



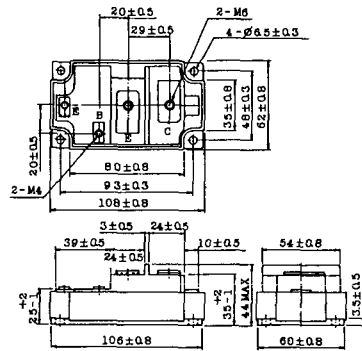
### 2-108B1A



### 2-109A3A



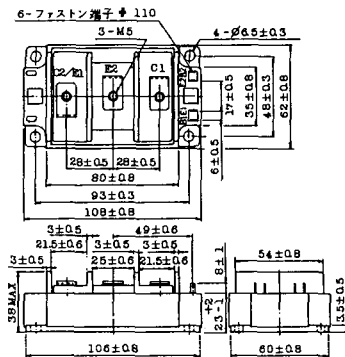
### 2-109A4A



### 2-109B3A

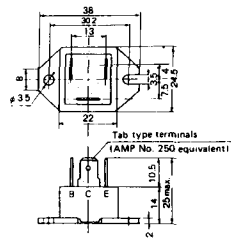


### 2-109B4A

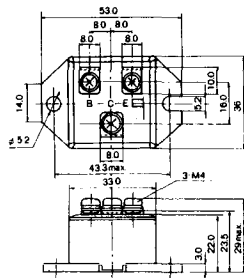




M-101



M-102



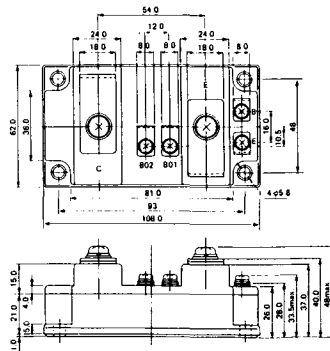
M-103



M-104



M-105



M-106

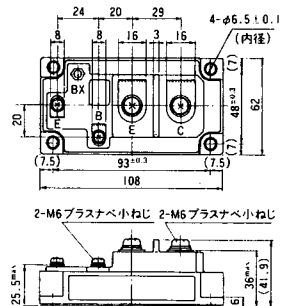




### M-107



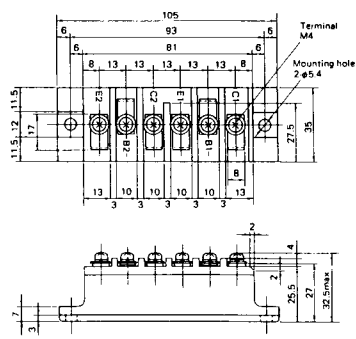
### M-116



M-201



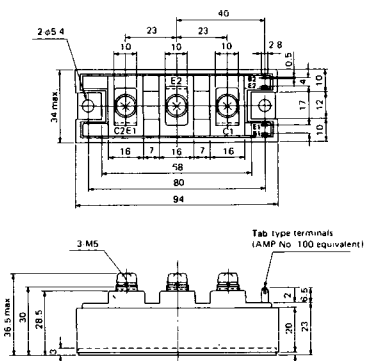
M-202



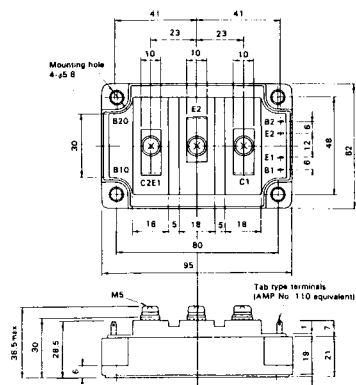
M-203



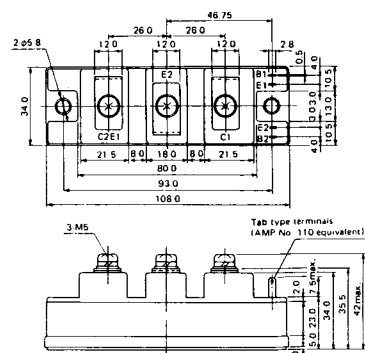
M-204



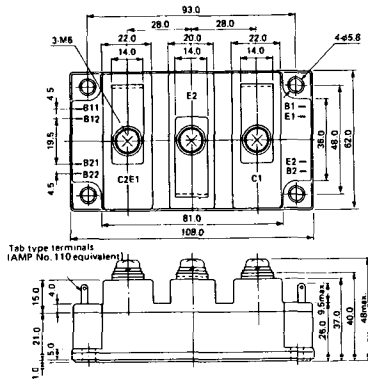
M-205



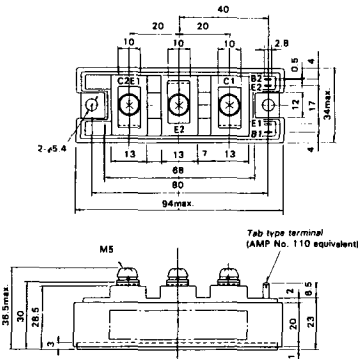
M-206



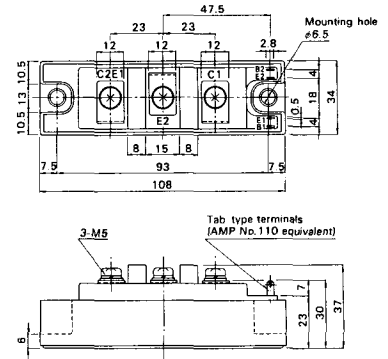
### M-207



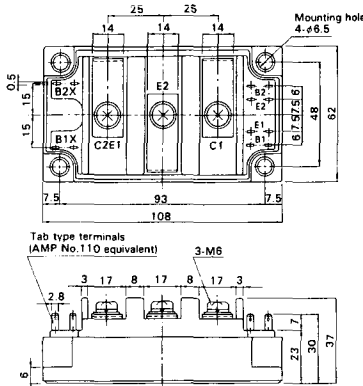
### M-208



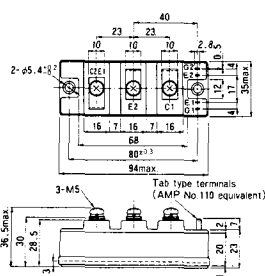
### M-209



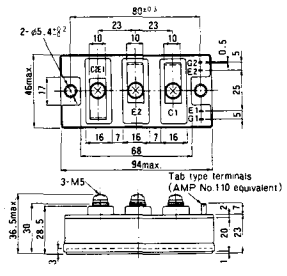
### M-210



### M-211



### M-212





M-219

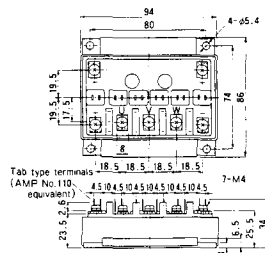




M-607



M-608



M-609



M-610



M-616

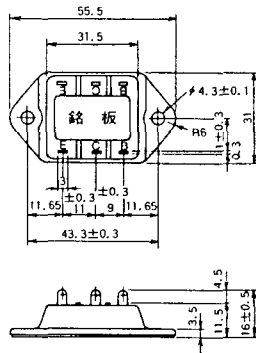




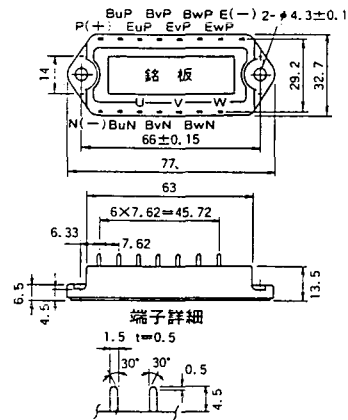




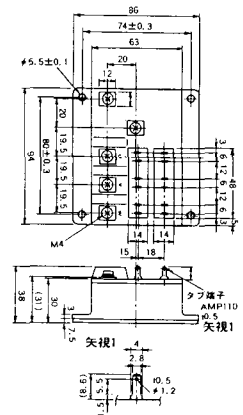
M-3C1A



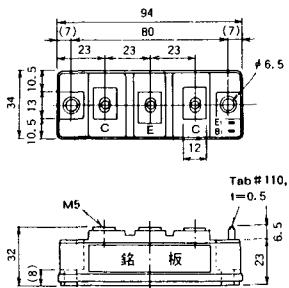
M-3D6A



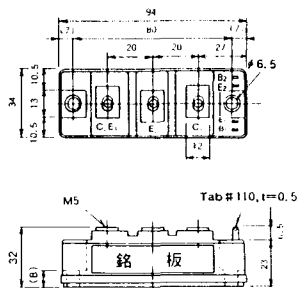
M-3E6A



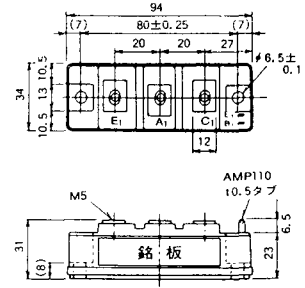
M-4A1A



M-4A2A



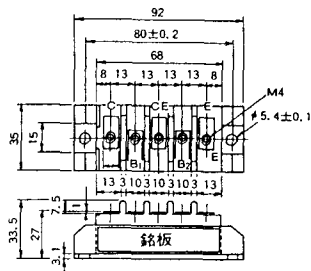
M-4A1B



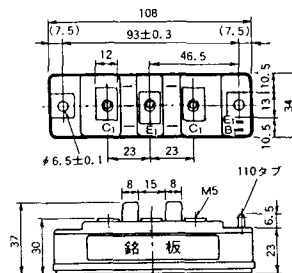
M-4A2B



M-4B2A



M-5A1A



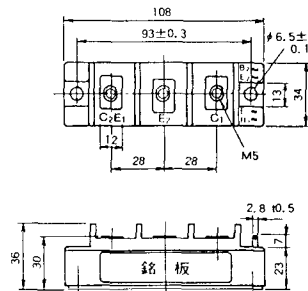
M-5A1B



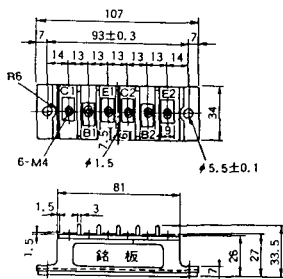
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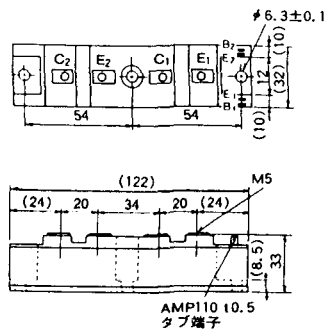
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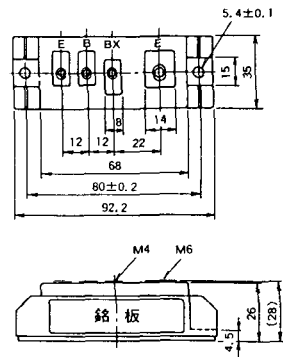
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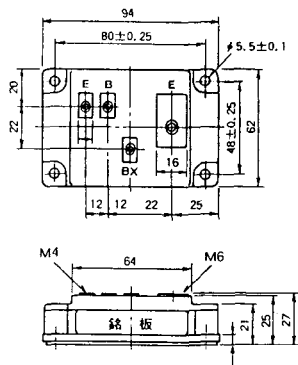
M-5D2A



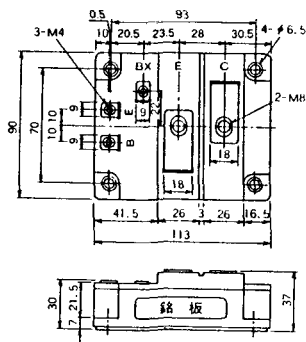
M-6A1A



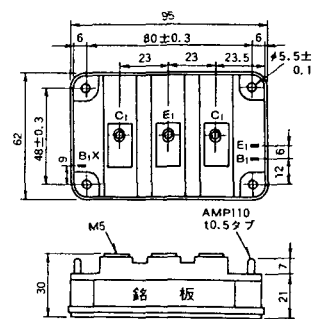
M-7A1A



M-7B1A



M-8A1A

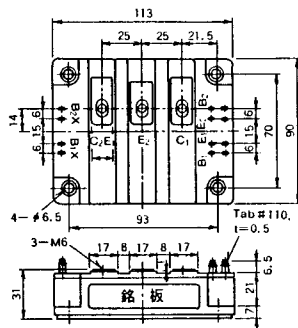




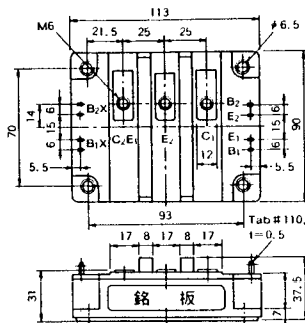




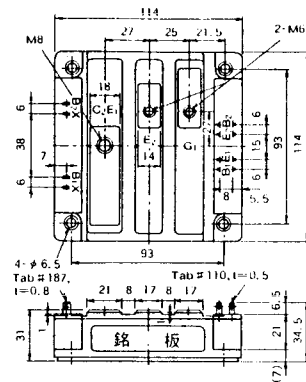
M-10A2A



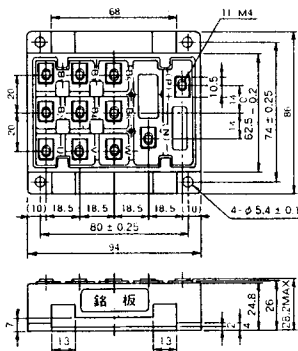
M-10A2B



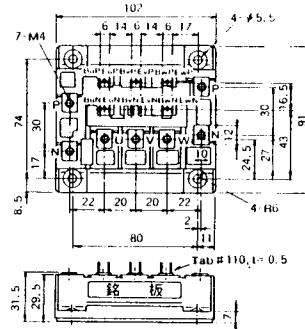
M-11A2A



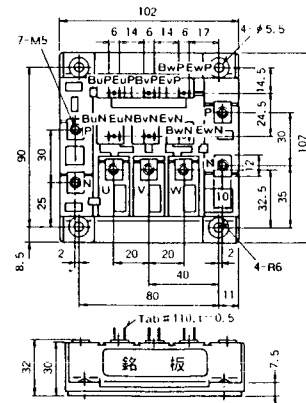
M-12A6A



M-12B6A



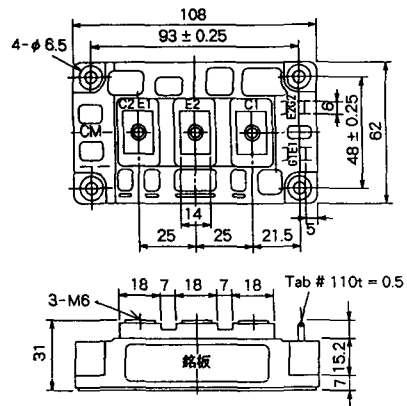
M-12B6B







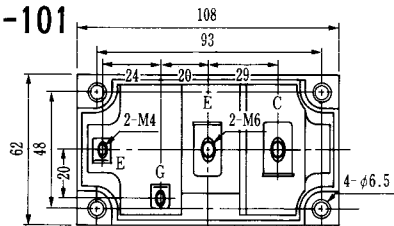
M-9D2B



M-10A2C

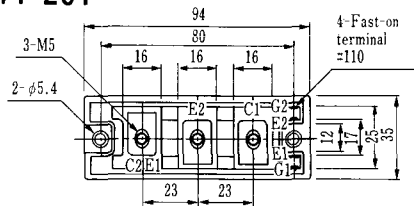


H-101



Weight :480g

### H-201



Weight: 200g

### H-202



Weight: 360g

### LF-J



### LF-K



