

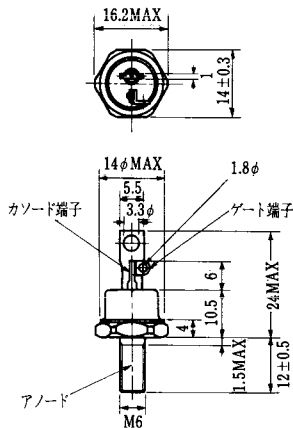
SG2000EX21			■外形図番号 T-36 (13-120E1A)					
○ヒーク繰返しオフ電圧 2500V, 実効オン電流 1000A								
■最大定格			*1 スナバ回路, $R_s=10\Omega$, $C_s=6\mu\text{F}$		■電気的特性			
					*2 $R_{GK}=10\Omega$			
記号	SG2000EX21	単位	記号	測定条件	Min	Typ	Max	単位
V_{RRM}	500	V	I_{RRM}	$T_j=115^\circ\text{C}$, $V_D=V_{RRM}$ *2			80	mA
V_{DRM}	2500	V	I_{DRM}	$T_j=115^\circ\text{C}$, $V_D=V_{DRM}$ *2			80	mA
I_{TGRM}	2000 *1	A	V_{TM}	$T_c=25^\circ\text{C}$, $I_{TM}=2000\text{A}$			2.75	V
$I_{T(RMS)}$	1000	A	V_{GT}	$T_c=25^\circ\text{C}$, $V_D=24\text{V}$		0.7	1.5	V
I_{TSM}	20000/22000 (50Hz/60Hz, 正弦半波1サイクル波高値)	A	I_{CT}	$R_L=0.5\Omega$		0.8	1.5	A
I^2t		A ² S	V_{GD}	$T_c=115^\circ\text{C}$, $V_D=\frac{1}{2}V_{DRM}$	0.3			V
di/dt	250 ($V_D=\frac{1}{2}V_{DRM}$, $I_G=20\text{A}$, $t_r\leq 1\mu\text{s}$, $f=50\text{Hz}$)	A/ μs	I_{GD}		10			mA
P_{GFM}	50	W	V_{GQ}	$I_T=2000\text{A}$, $V_D=\frac{2}{3}V_{DRM}$			35	V
P_{GRM}	15000	W	I_{GQ}	$dv/dt=500\text{V}/\mu\text{s}$, $T_c=110^\circ\text{C}$			400	A
$P_{GFI(AV)}$	6	W	dv/dt	$T_j=115^\circ\text{C}$, $V_D=\frac{2}{3}V_{DRM}$ *2	500			V/ μs
V_{GRM}	15	V	I_H	$T_c=25^\circ\text{C}$, $R_L=0.5\Omega$ *2			40	A
I_{GFM}	50	A	t_s	$T_c=110^\circ\text{C}$, $I_{TM}=2000\text{A}$		18	21	μs
T_j	115	$^\circ\text{C}$	t_{eq}	$I_{GR}=400\text{A}$, $V_D=\frac{2}{3}V_{DRM}$			23	μs
T_{stg}	-40~115	$^\circ\text{C}$	R_{th}	$dig/dt=40\text{A}/\mu\text{s}$ *1			0.02	$^\circ\text{C}/\text{W}$
				接合部~フィン間, DC				

SG2000EX21 (VRRM)			■外形図番号 T-36 (13-120E1A)					
■最大定格			■電気的特性					
記号	SG2000EX21 (VRRM)	単位	記号	測定条件	Min	Typ	Max	単位
V_{RRM}	2000	V	I_{RRM}	$T_j=115^\circ\text{C}$, $V_D=V_{RRM}$			150	mA
V_{DRM}	2500	V	I_{DRM}	$T_j=115^\circ\text{C}$, $V_D=V_{DRM}$, $R_{GK}=10\Omega$			150	mA
I_{TGRM}	2000 ($V_D=\frac{1}{2}V_{DRM}$, $V_{DM}=\frac{2}{3}V_{DRM}$, $C_s=6\mu\text{F}$, $R_s=20\Omega$, $T_j=115^\circ\text{C}$)	A	V_{TM}	$T_c=25^\circ\text{C}$, $I_{TM}=2000\text{A}$			2.75	V
$I_{T(RMS)}$	800 ($T_j=70^\circ\text{C}$)	A	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)	A	I_{CT}	$R_L=0.2\Omega$			1500	mA
I^2t		A ² S	V_{GD}		0.3			V
di/dt	300 ($I_{GP}=20\text{A}$, $t_r=1\mu\text{s}$, $V_D=\frac{1}{2}V_{DRM}$, $I_{TM}=2500\text{A}$, $f=50\text{Hz}$, $T_j=115^\circ\text{C}$)	A/ μs	I_{GD}	$T_c=115^\circ\text{C}$, $V_D=\frac{1}{2}V_{DRM}$	10			mA
I_{GFM}	40 (パルス幅: max. 20 μs , duty: max. 20%)	A	I_d	$T_c=25^\circ\text{C}$, $V_D=\frac{1}{2}V_{DRM}$, $I_{GP}=20\text{A}$			8	μs
$P_{GFI(AV)}$	14	W	t_{st}	$I_{TM}=2000\text{A}$, $di/dt=300\text{A}/\mu\text{s}$			15	μs
$I_{GR(RMS)}$		A	dv/dt	$T_j=115^\circ\text{C}$, $V_D=\frac{2}{3}V_{DRM}$, $V_{GK}=-4\text{V}$	500			V/ μs
P_{GRM}	10000 (パルス幅: max. 20 μs , duty: max. 2%)	W	I_H	$T_c=25^\circ\text{C}$, $R_L=0.2\Omega$			80	A
V_{GRM}	15	V	t_s	$T_c=110^\circ\text{C}$, $I_{TM}=2000\text{A}$			16	μs
T_j	115	$^\circ\text{C}$	t_{eq}	$V_D=\frac{1}{2}V_{DRM}$, $V_{DM}=\frac{2}{3}V_{DRM}$			18	μs
T_{stg}	-40~115	$^\circ\text{C}$	t_{hai}	$C_s=6\mu\text{F}$, $R_s=20\Omega$			180	μs
			I_{GR}	$dig/dt=-40\text{A}/\mu\text{s}$		400	450	A
			R_{th}	接合部~フィン間, DC			0.02	$^\circ\text{C}/\text{W}$

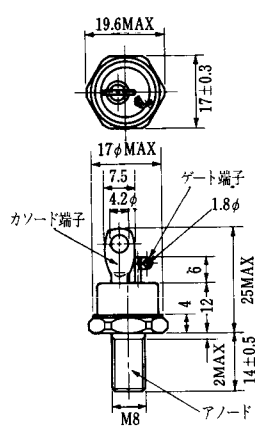
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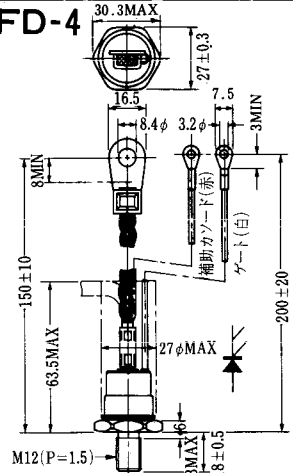
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FD-3



FD-4



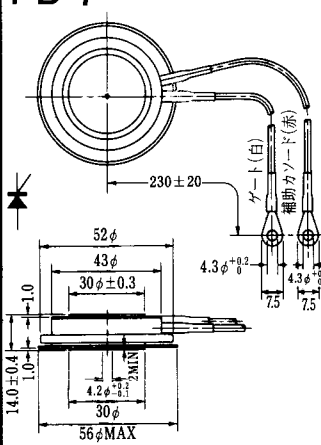
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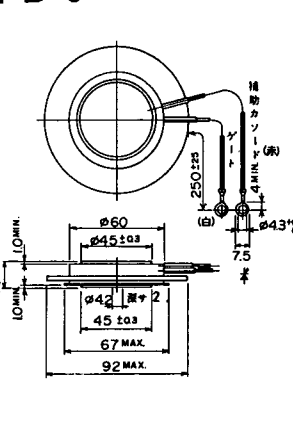
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FD-7



FD-8



FD-9



FD-10



FD-11

FD-12



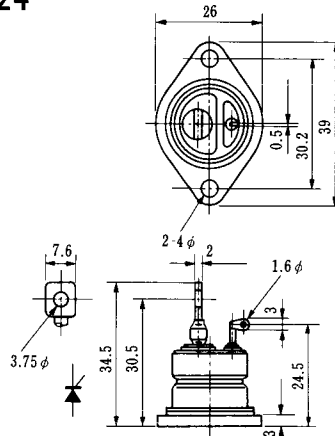


《寸法図単位：mm》

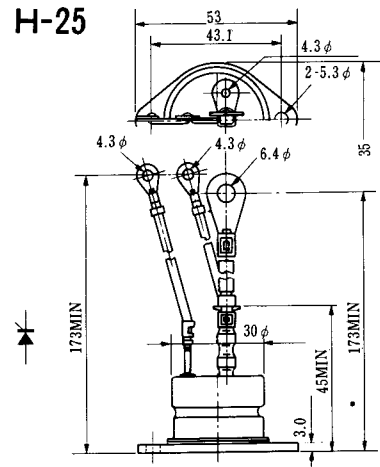
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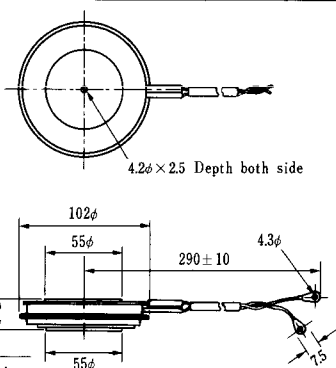
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H-25

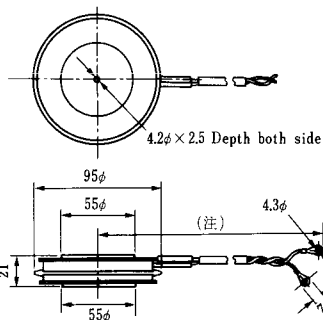


H-26



Type	Direction of polarity
CA12	

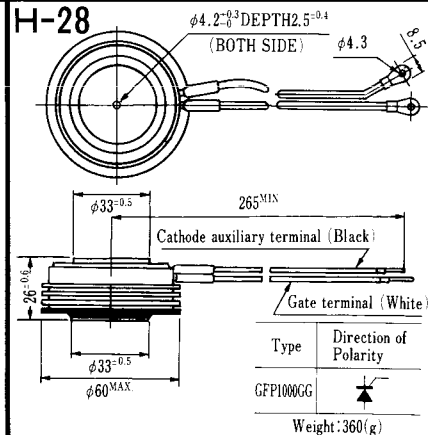
H-27



Type	Direction of polarity
CF11V	

(注) CC11V : 400 ± 10
CF11V : 250 ± 10

H-28



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



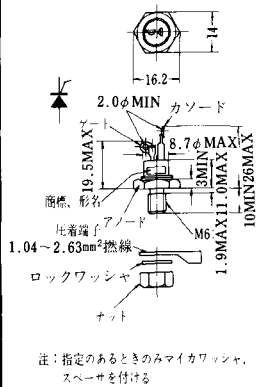
M-3



M-4



M-5



M-6



M-7



M-8



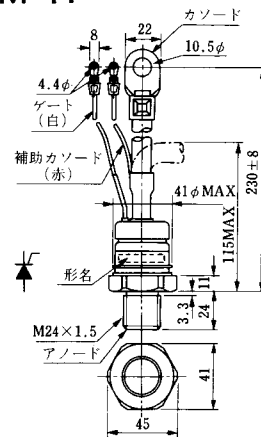
M-9



M-10



M-11



M-12



M-13



M-14



M-15



M-16





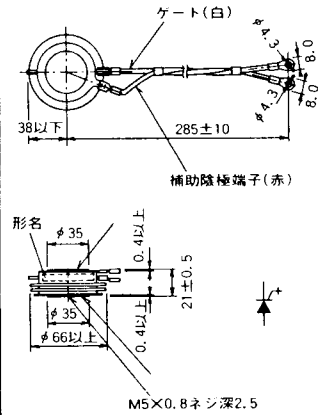
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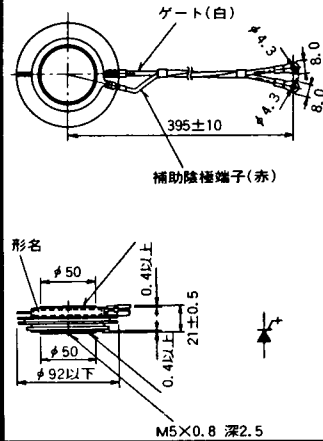
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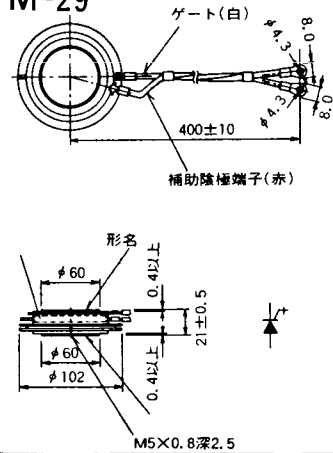
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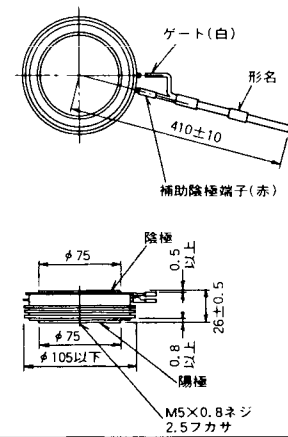
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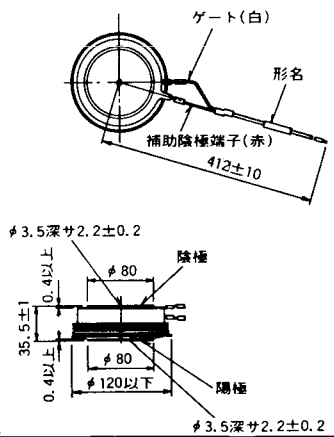
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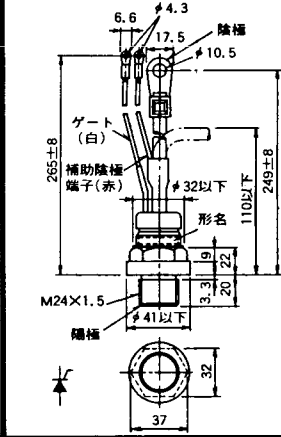
M-30



M-31



M-32



M-33



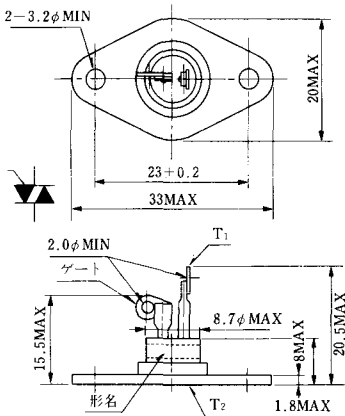
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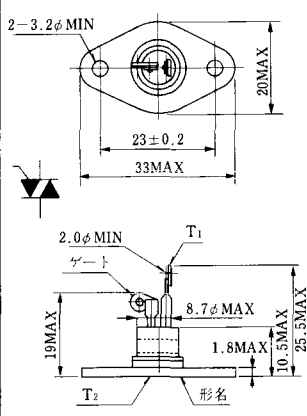
MT-8



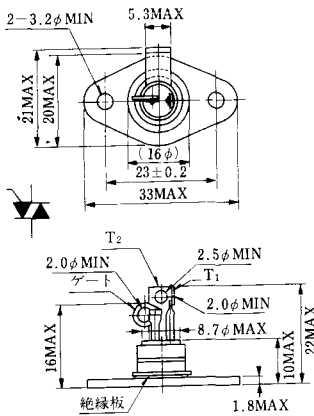
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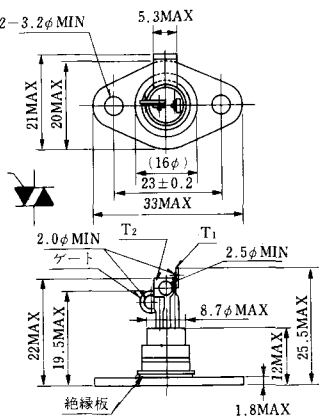
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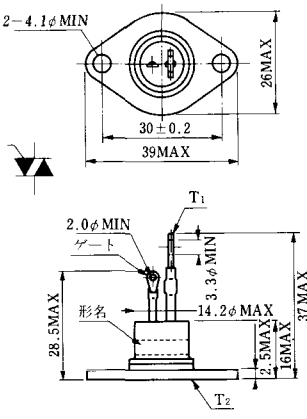
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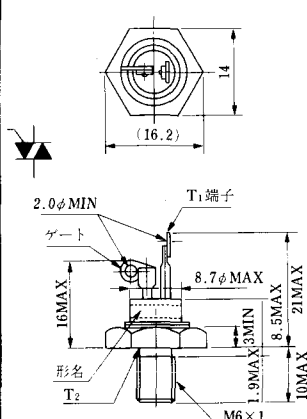
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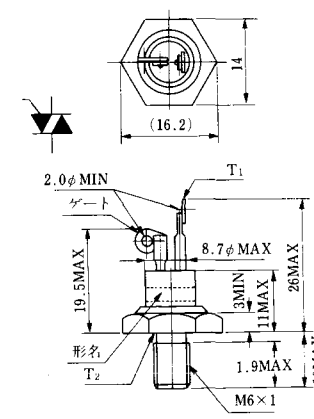
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MT-14



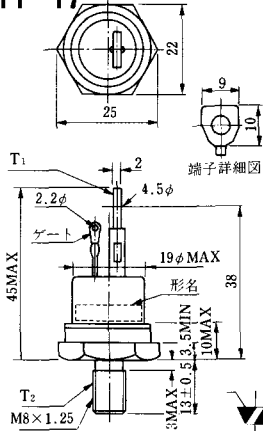
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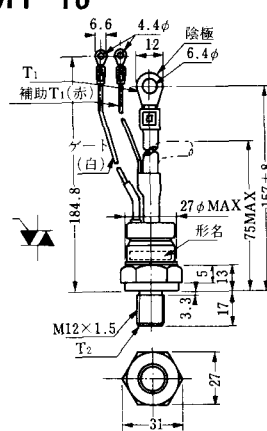
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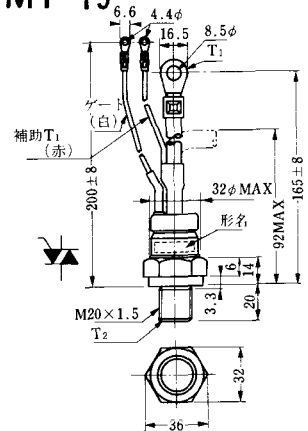
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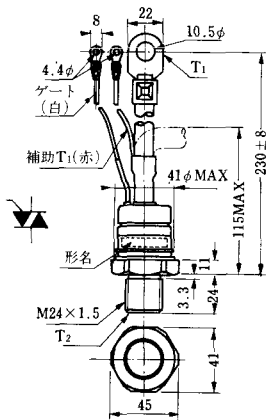
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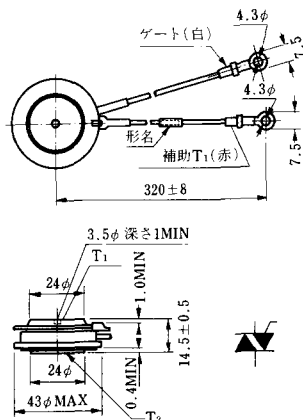
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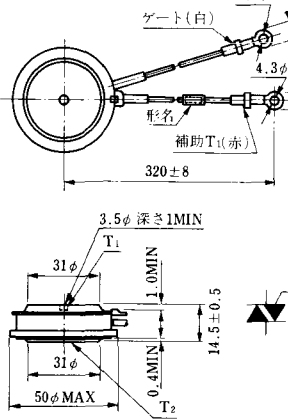
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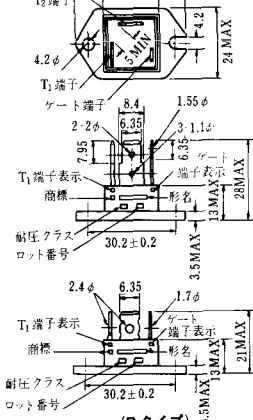
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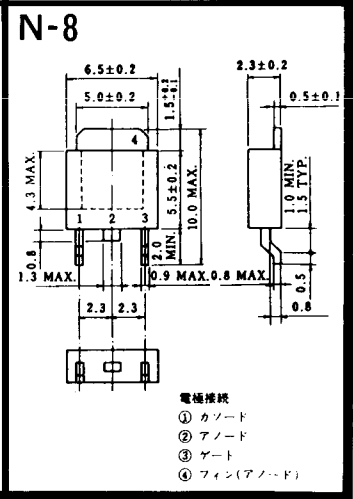
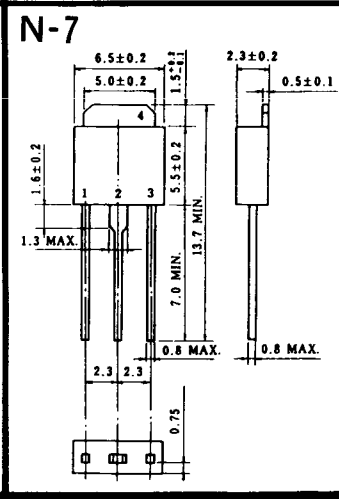
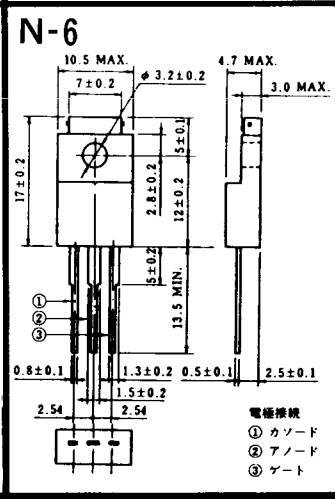
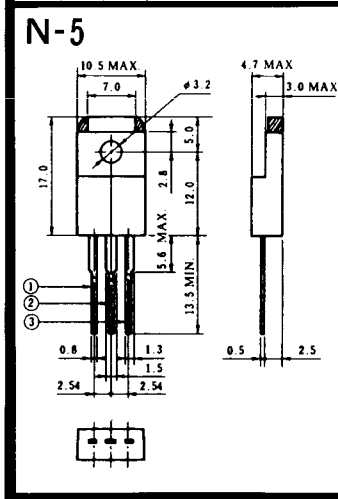
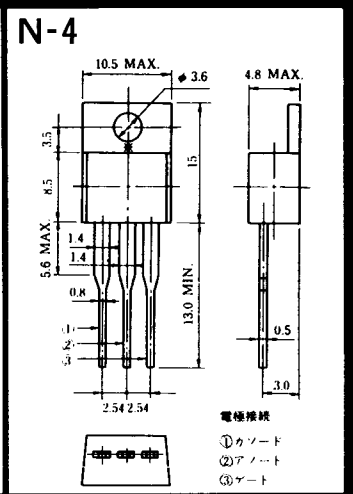
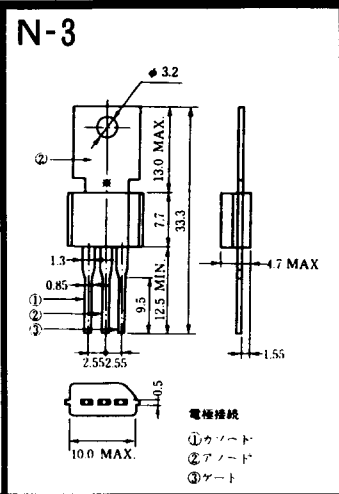
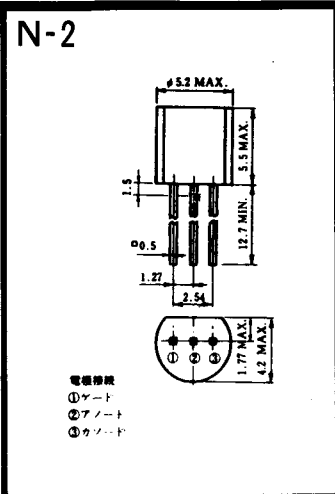
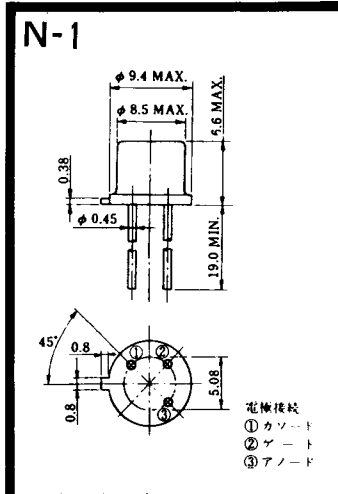


MT-22



MT-23





NA-1

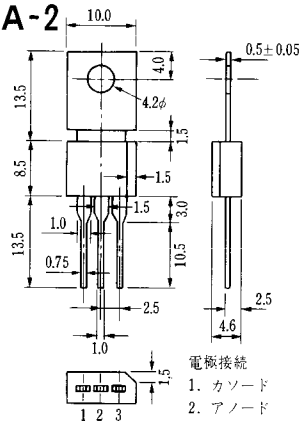


電極接続

1. ゲート
2. アノード
3. カソード

JEDEC: TO-92

NA-2

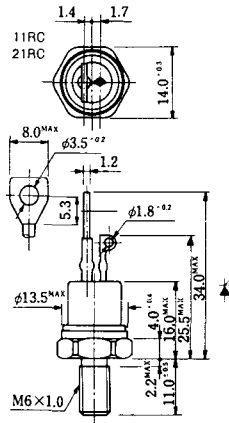


電極接続

1. カソード
2. アノード
3. ゲート

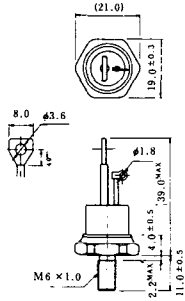
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NI-1



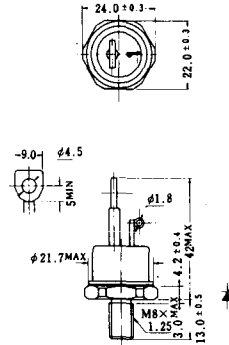
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29RD



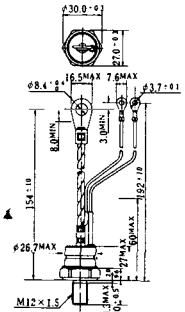
NI-3

39RC
59RC
39RF
59RF



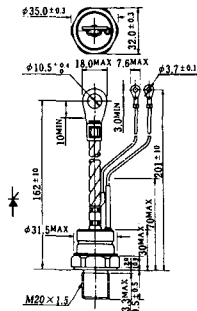
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68RP, 88RP, 108RP, 68RS,
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88RLF, 88RLG, 88RLH, 108RLE



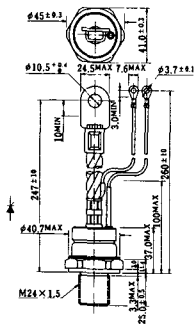
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208RLE



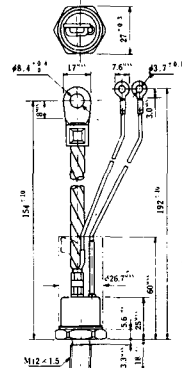
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258RLH, 308RLE, 308RLF,
358RLE



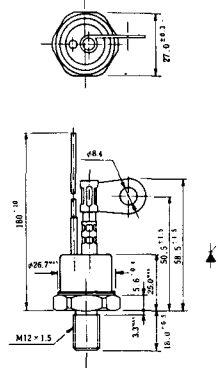
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89RW_{JL}
129RW_{JL}



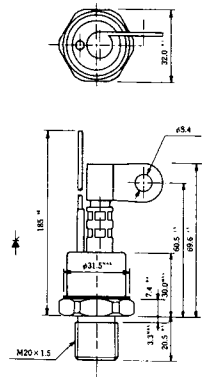
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89RW
129RW



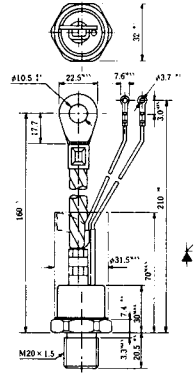
NI-9

259RW
309RW



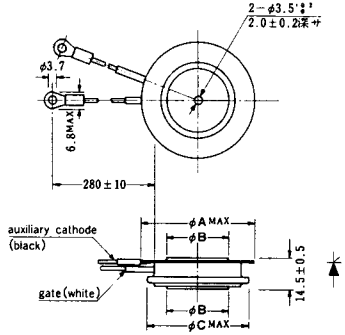
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259RW_{JL}
309RW_{JL}



NI-11

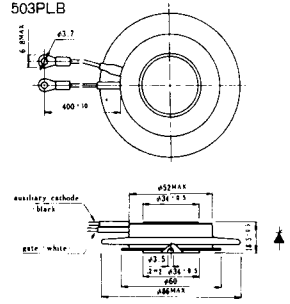
103PA
253PA
503PA
553PA
803PA
103PLE
103PLG
103PLH
203PLG
253PLE
253PLH
353PLG
403PLE
403PLH



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

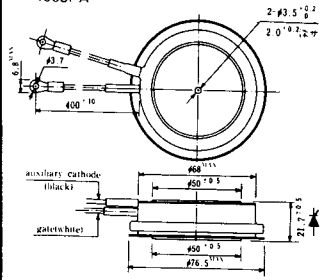
NI-12

403PAB
503PAB
503PLB



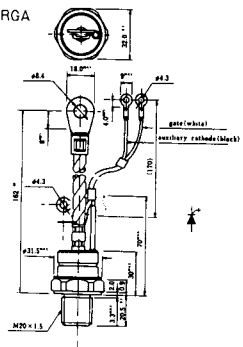
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1003PA
1003PAB
1003PLF
1003PLH
1503PA



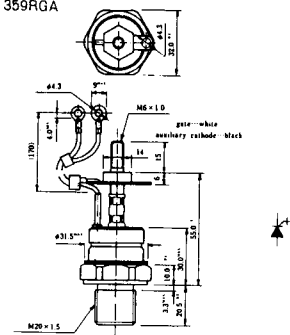
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358RGA



NI-15

359RGA





NI-24

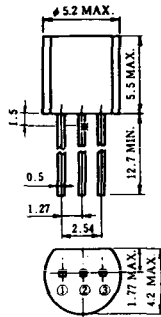
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NI-25

NI-26

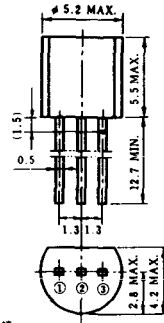
NT-1



電極接続

- ① T₁
- ② ゲート
- ③ T₂

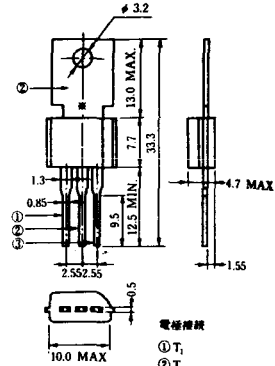
NT-2



電極接続

- ① T₁
- ② ゲート
- ③ T₂

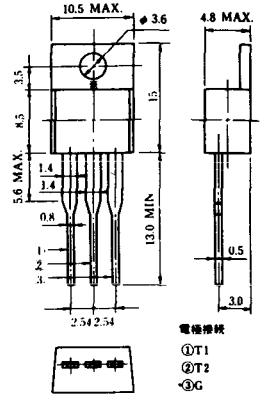
NT-3



電極接続

- ① T₁
- ② T₂
- ③ ゲート

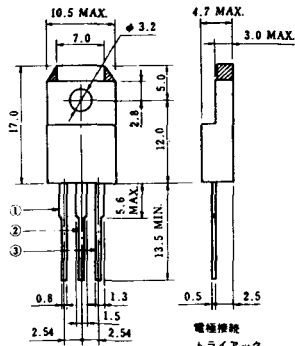
NT-4



電極接続

- ① T₁
- ② T₂
- ③ G

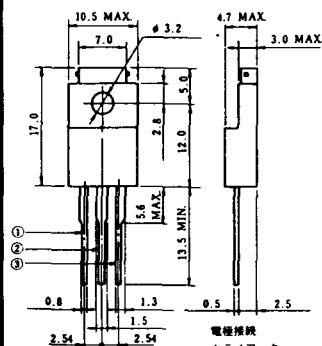
NT-5



電極接続
トライアック

- ① T₁
- ② T₂
- ③ ゲート

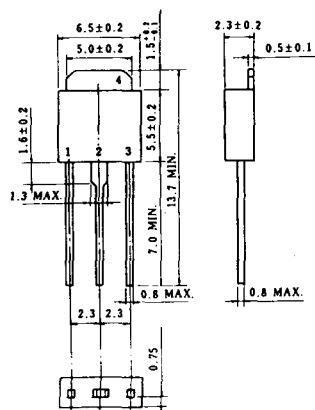
NT-6



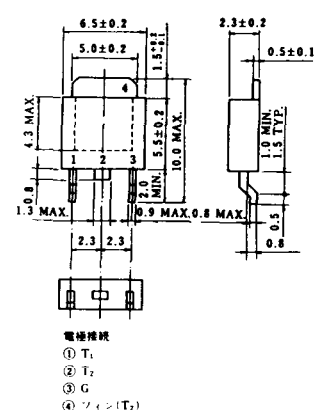
電極接続
トライアック

- ① T₁
- ② T₂
- ③ ゲート

NT-7



NT-8



電極接続

- ① T₁
- ② T₂
- ③ G
- ④ シフト(T₂)

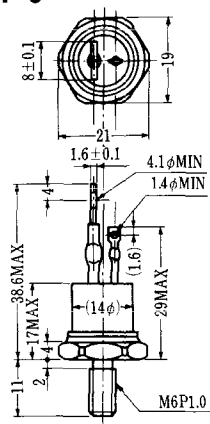
SA-1



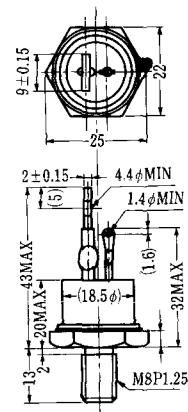
SA-2



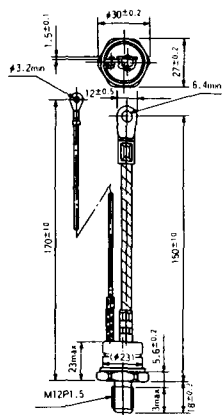
SA-3



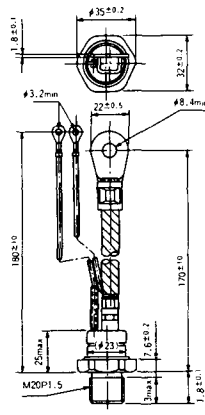
SA-4



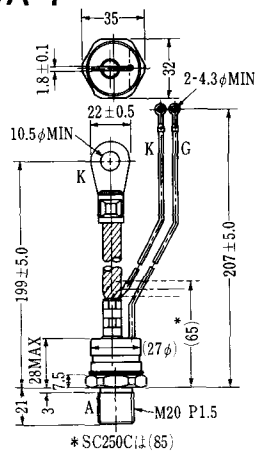
SA-5



SA-6

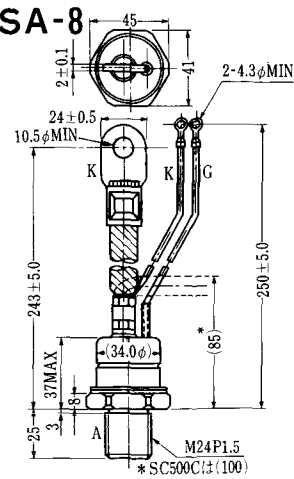


SA-7



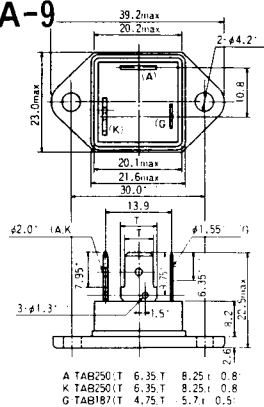
* SC250C:(1)(85)

SA-8

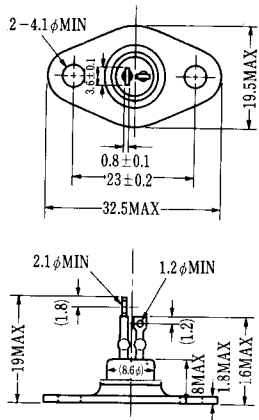


* SC500C:(1)(100)

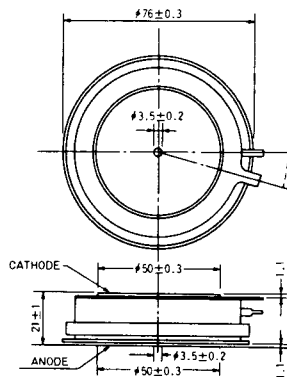
SA-9



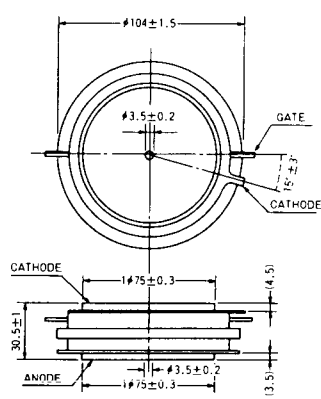
SA-10



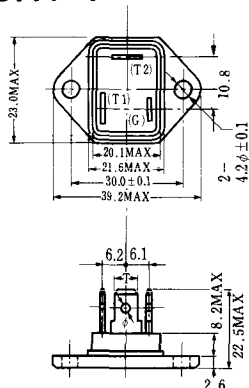
SA-11



SA-12

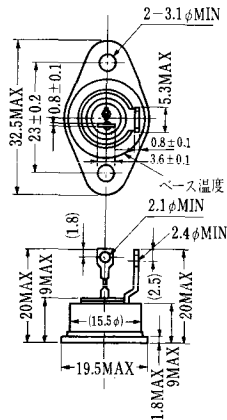


SAT-1



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)

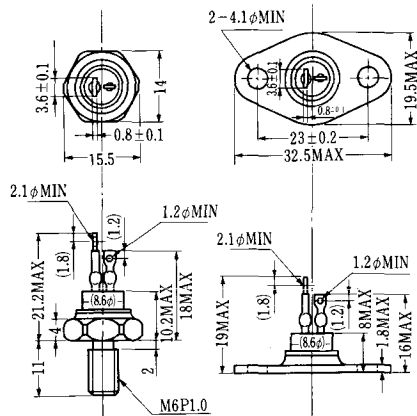
SAT-2



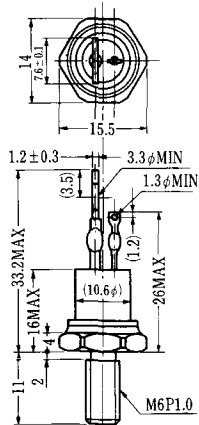
SAT-3



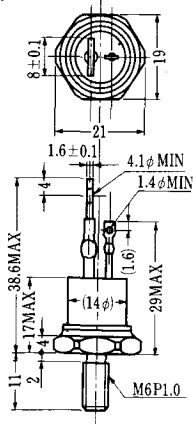
SAT-4



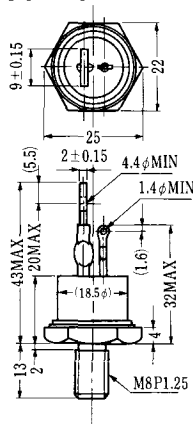
SAT-5



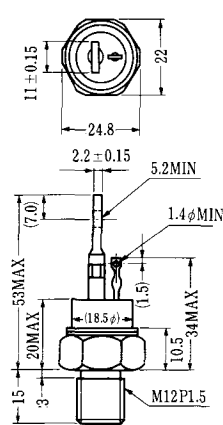
SAT-6



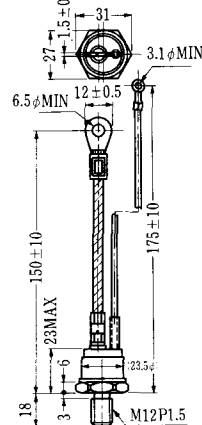
SAT-7



SAT-8



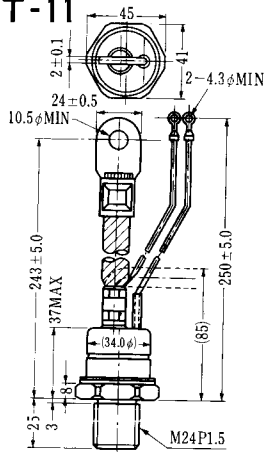
SAT-9



SAT-10



SAT-11

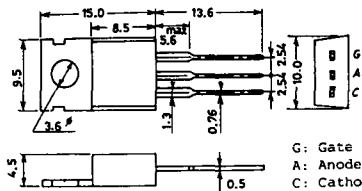


SY-1 (1096A)



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



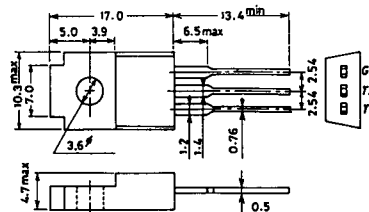
1141



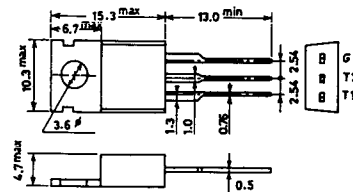
1142



1144



1155

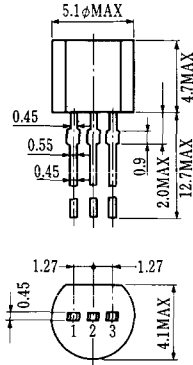


1192A



G: Gate

T-1 (13-5A1A)



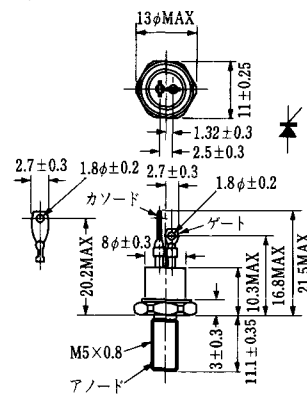
- 1 ゲート
- 2 アノード
- 3 カソード

T-2 (13-8A1A)



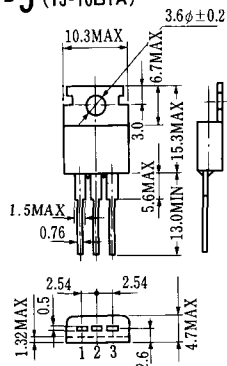
1. カソード
2. ゲート
3. アノード(ケース)

T-3 (13-8C1A)



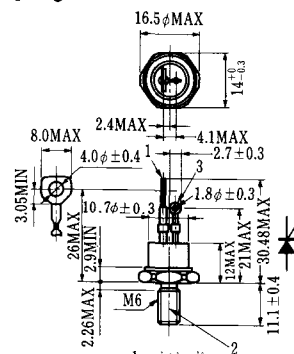
- 1 カソード
- 2 アノード
- 3 ゲート

T-5 (13-10B1A)



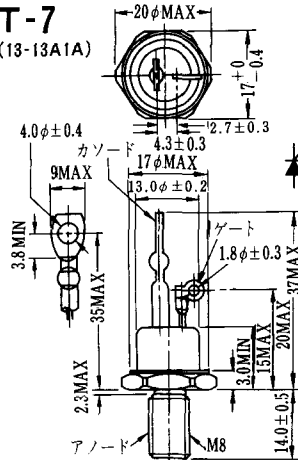
- 1 カソード
- 2 アノード
- 3 ゲート

T-6 (13-11D1A)

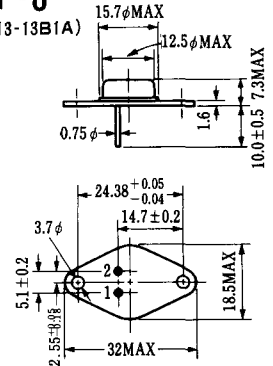


- 1 カソード
- 2 アノード
- 3 ゲート

T-7 (13-13A1A)

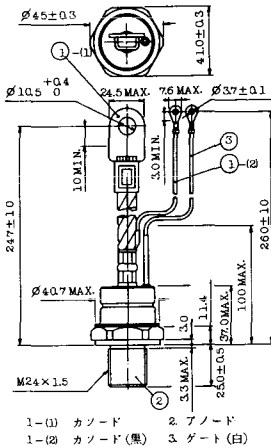


T-8 (13-13B1A)

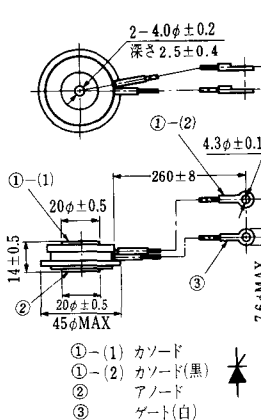


1. ゲート
2. カソード
3. アノード(ケース)

T-17 (13-42A1A)



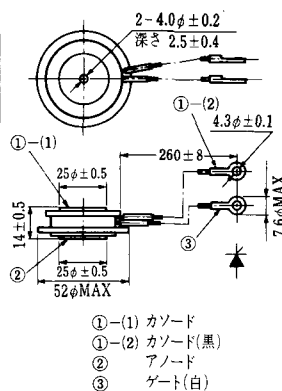
T-18 (13-45D1A)



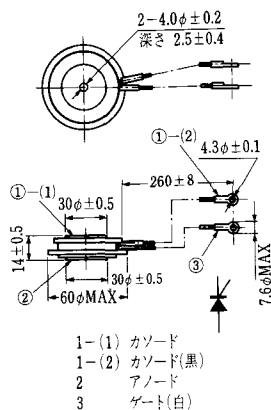
T-19 (13-52B1A)



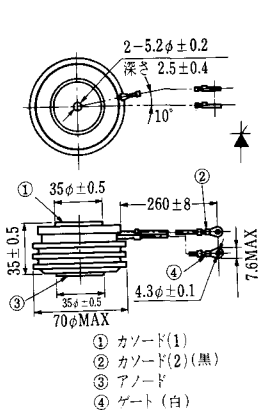
T-20 (13-52C1A)



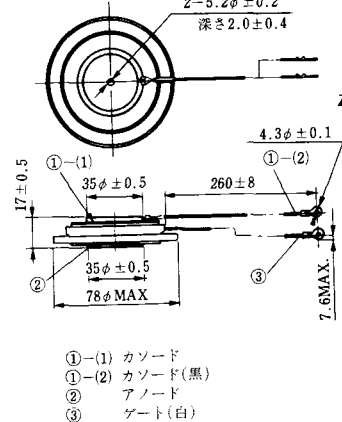
T-21 (13-60A1A)



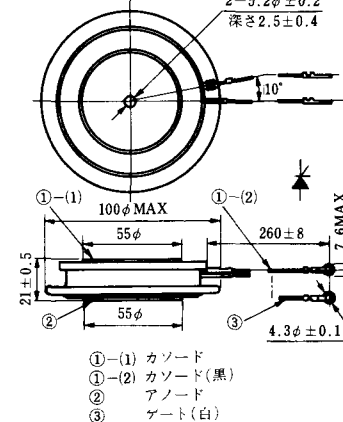
T-22 (13-70C1A)



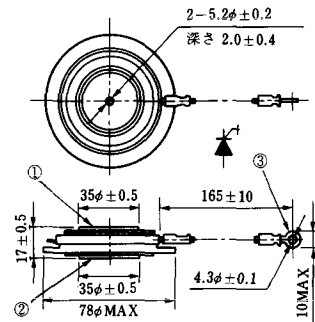
T-23 (13-78A1A)



T-24 (13-100C1A)

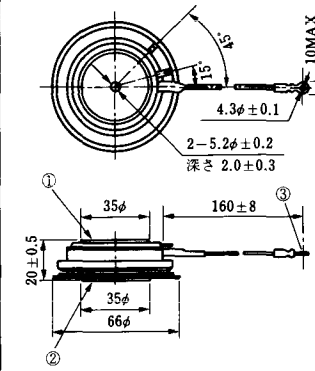


T-33 (13-78B1A)



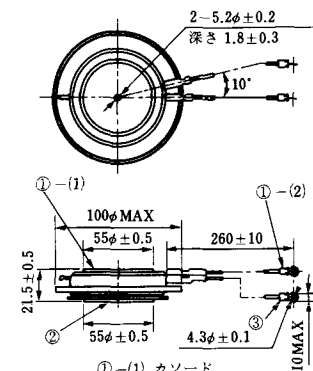
- ① カソード
- ② アノード
- ③ ゲート

T-34 (13-66A1A)



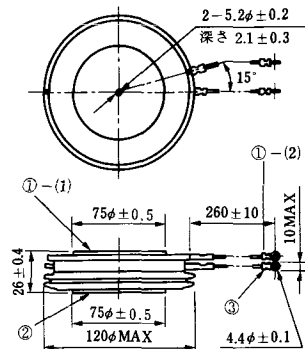
- ① カソード
- ② アノード
- ③ ゲート

T-35 (13-100D1A)



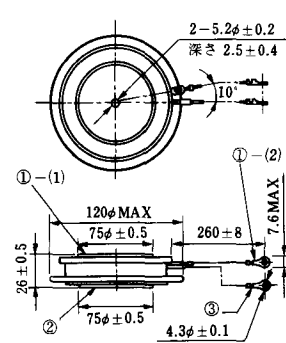
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-36 (13-120E1A)



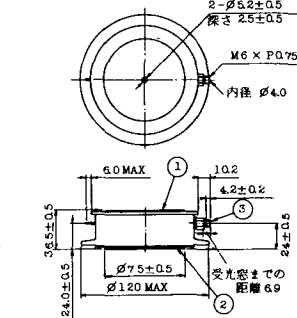
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-37 (13-120A1A)



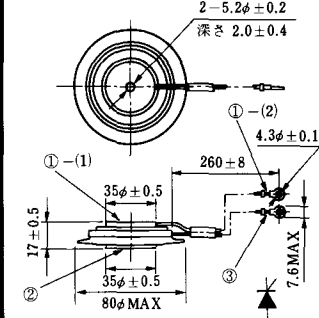
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-38 (13-120C1A)



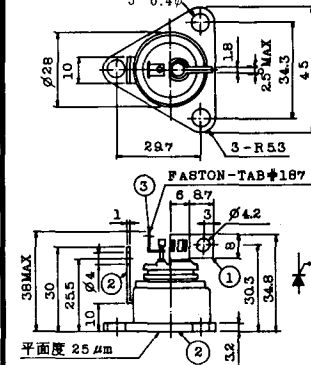
- ① カソード
- ② アノード
- ③ ゲート

T-39 (13-80B1A)



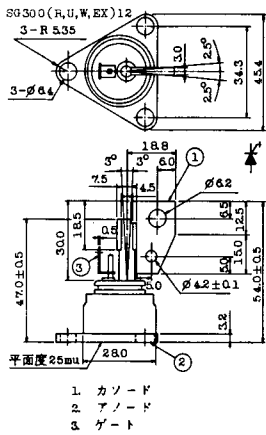
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-40 (13-28A1A)

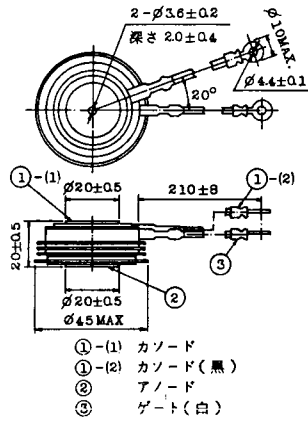


- 1. カソード
- 2. アノード
- 3. ゲート

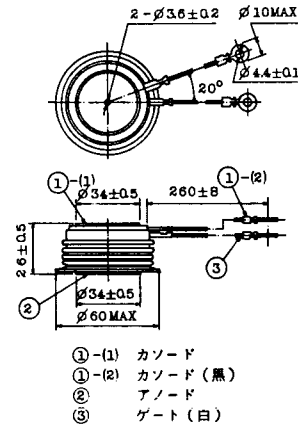
T-41 (13-28A2A)



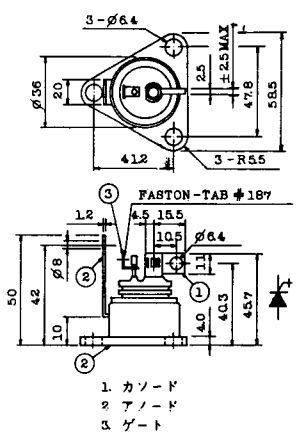
T-42 (13-45F1A)



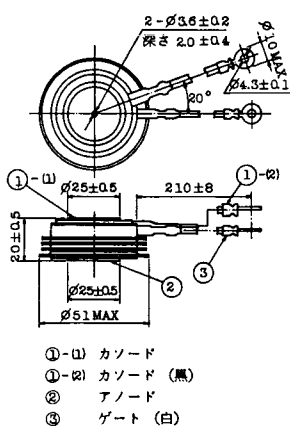
T-43 (13-60E2A)



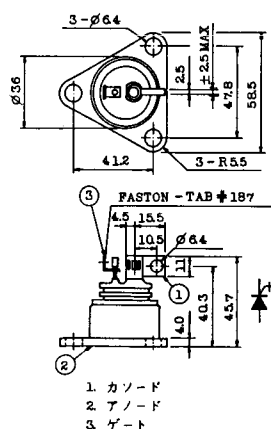
T-44 (13-36A1A)



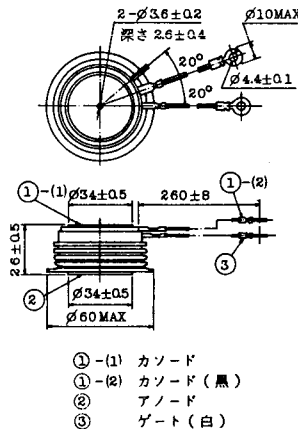
T-45 (13-51B1A)



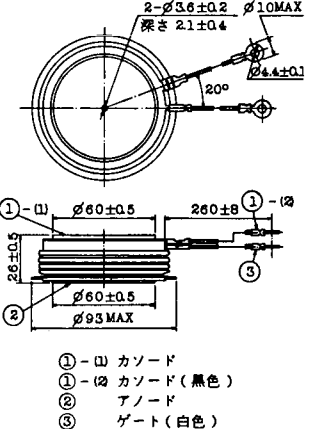
T-46 (13-36B1A)



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)



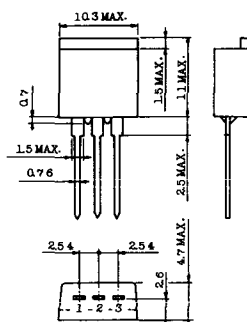
- 1 カソード
- 2 アノード
- 3 ゲート

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)



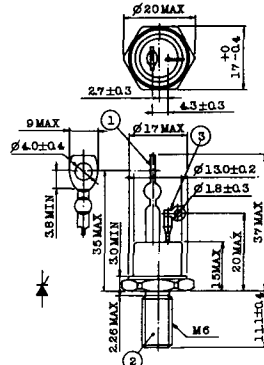
- 1 カソード
- 2 アノード
- 3 ゲート

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-(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)



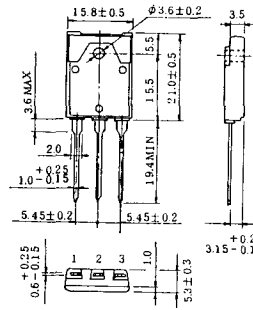
1. ゲート
2. アノード
3. カソード

T-62 (13-10H1A)



1. カソード
2. アノード
3. ゲート

T-63 (13-16A1B)



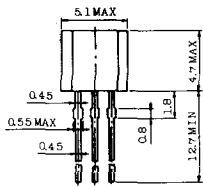
1. カソード
2. アノード
3. ゲート

TT-1



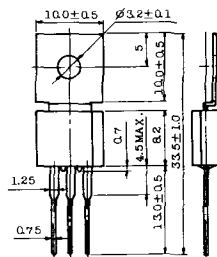
- 1 ゲート
- 2 T₂
- 3 T₁

TT-2



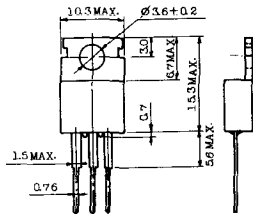
- 1 T₁
- 2 ゲート
- 3 T₂

TT-3



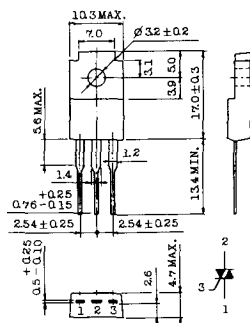
- 1 T₁
- 2 T₂
- 3 ゲート

TT-4



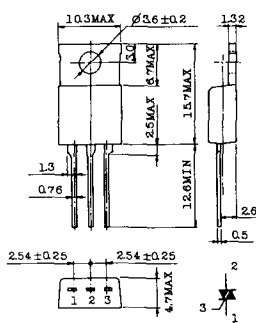
- 1 T₁
- 2 T₂
- 3 ゲート

TT-5



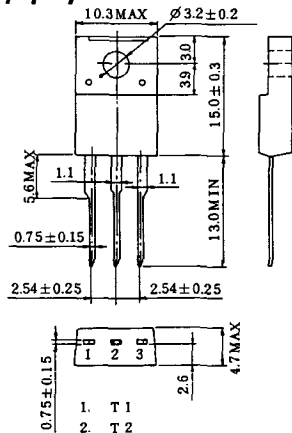
- 1 T₁
- 2 T₂
- 3 ゲート

TT-6



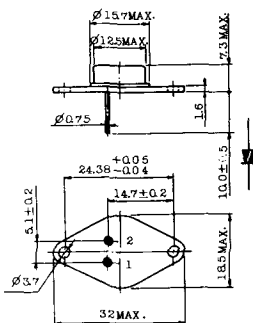
- 1 T₁
- 2 T₂ (放熱板)
- 3 ゲート

TT-7



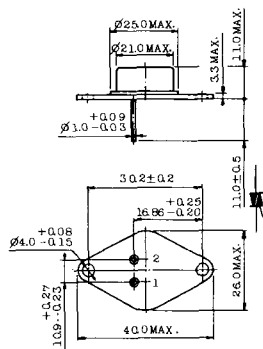
- 1 T₁
- 2 T₂
- 3 ゲート

TT-8



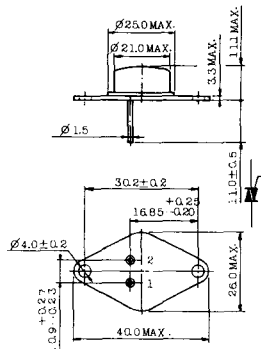
- 1 ゲート
- 2 T₁
- T₂ (ケース)

TT-9



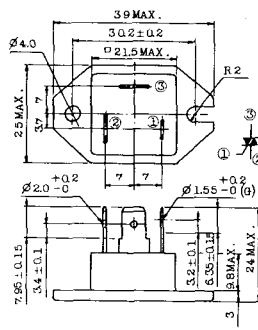
1. ゲート
2. T₁
3. T₂ (ケース)

TT-10



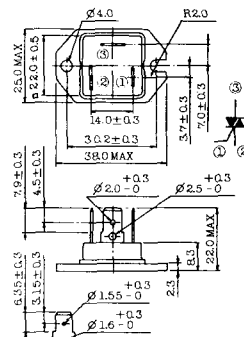
1. ゲート
2. T₁
3. T₂ (ケース)

TT-11



1. ゲート (フーストン端子 #187)
2. T₁ (" #250)
3. T₂ (" #250)

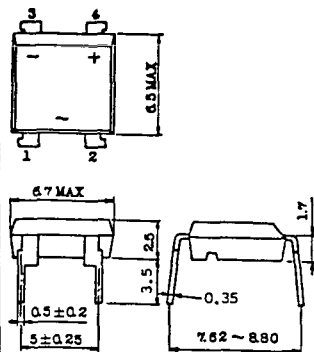
TT-12



ゲート端子詳細

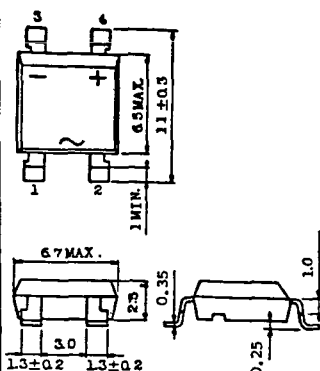
- ① ゲート (フーストン端子 #187)
- ② T₁ (" #250)
- ③ T₂ (" #250)

TT-13



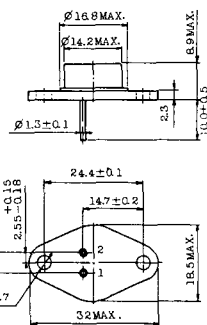
- 1, 2: T₂
- 3: GATE
- 4: T₁

TT-14



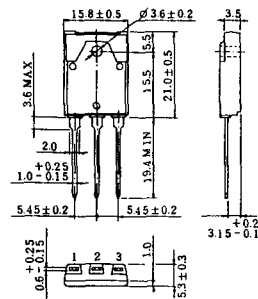
- 1, 2: T₂
- 3: GATE
- 4: T₁

TT-15 (13-14A1B)



1. ゲート
2. T₁
- T₂ (ケース)

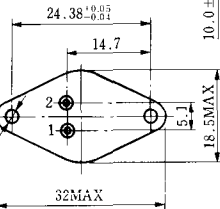
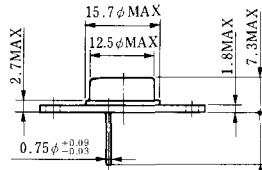
TT-16 (13-16A1A)



1. T₁
2. T₂
3. ゲート

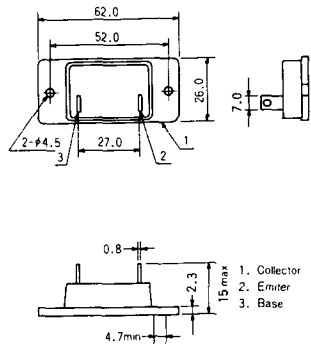


TS-8

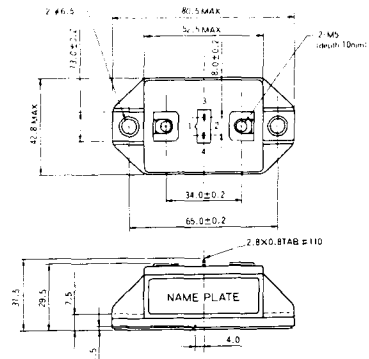


- 1. ベース
- 2. エミッタ
コレクタ
(ケース)

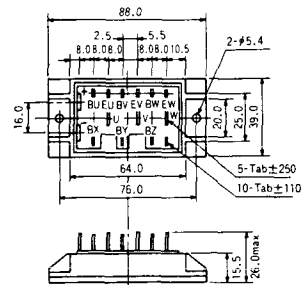
S-62A1A



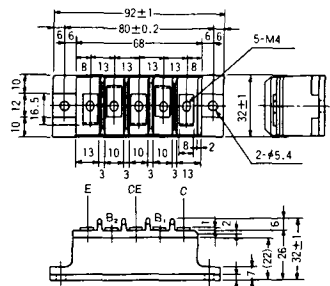
S-80A1A



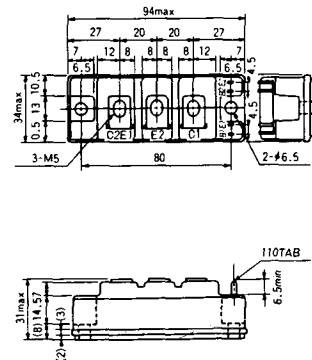
S-88D1A



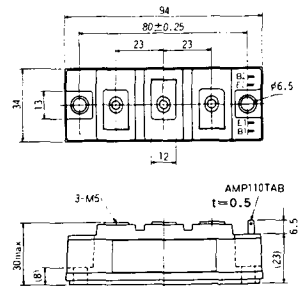
S-92B1A



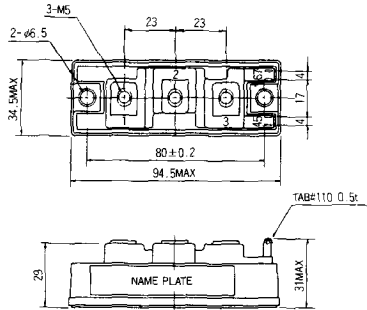
S-94B1A



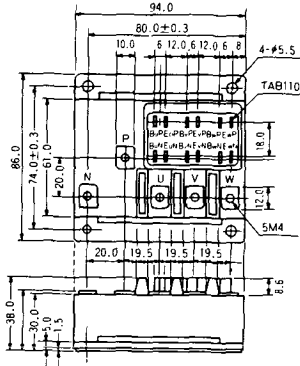
S-94B1B



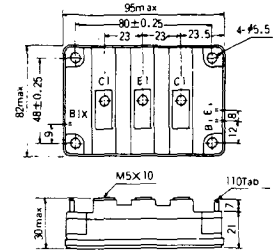
S-94B2A



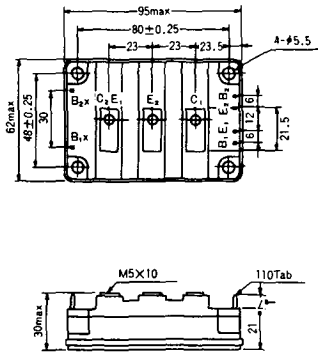
S-94D1A



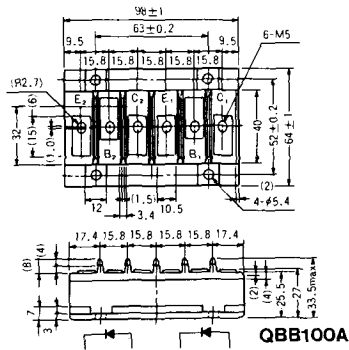
S-95A1A



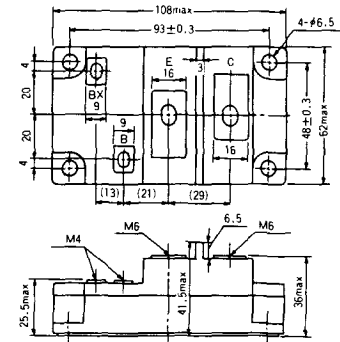
S-95B1A



S-98B1B



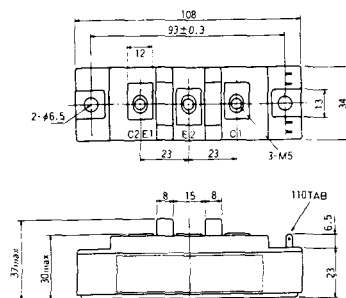
S-108A2A



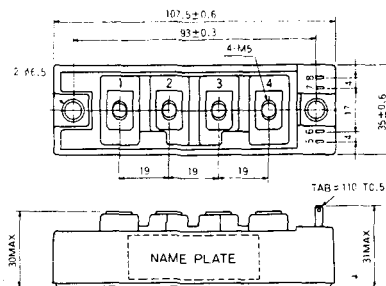
S-108B1A



S-108B1B



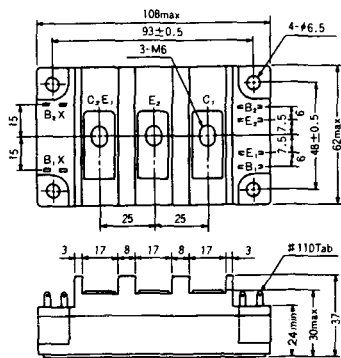
S-108B1C



S-108B2A



S-108B2B



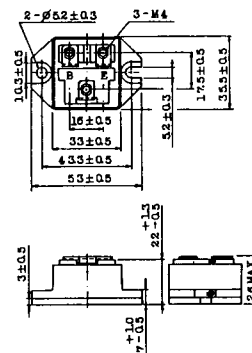
2-22B1A



2-27A4A



2-33C1A



2-33D1A



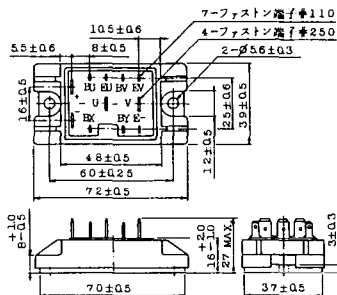
2-33F1A



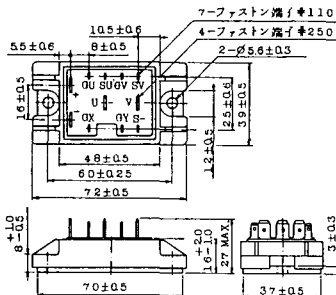
2-37A1A



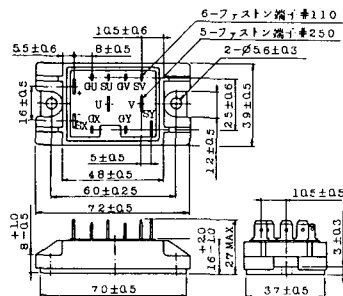
2-48A3A



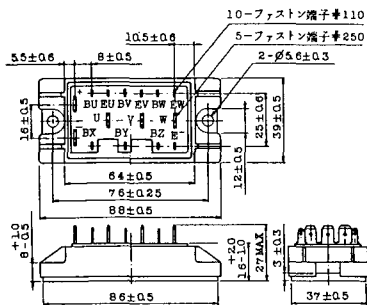
2-48A3B



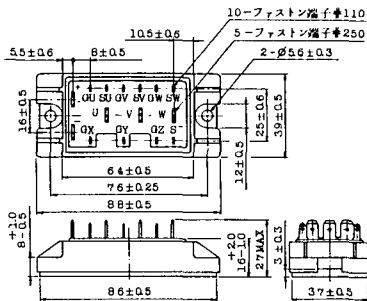
2-48A4A



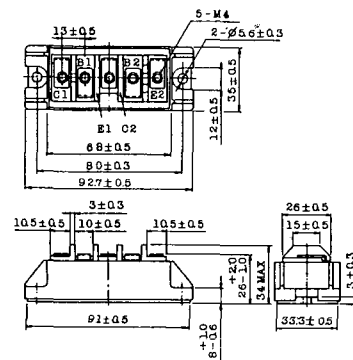
2-64A2A



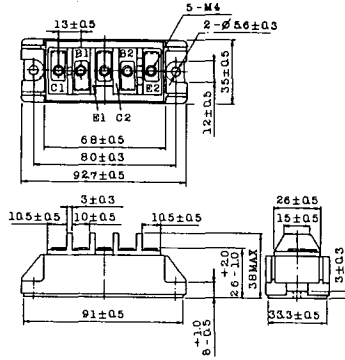
2-64A2B



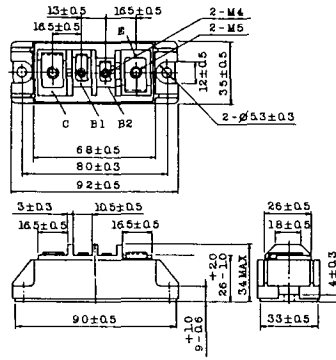
2-68A2A



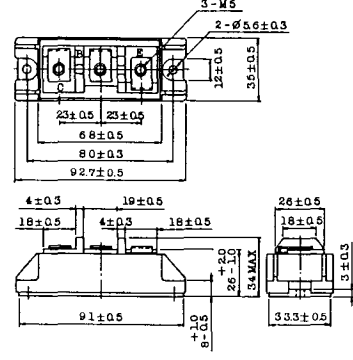
2-68B2A



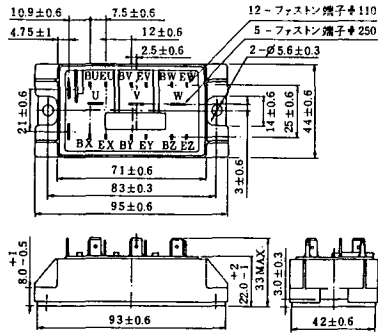
2-68C1A



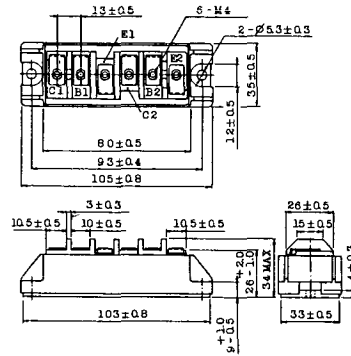
2-68D2A



2-72A3A



2-80A1A



2-80B1A



2-94D1A



2-96A3A



2-96A4A



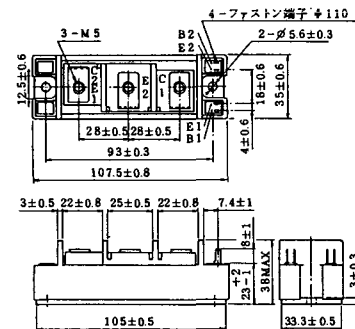
2-98B1A



2-98C2A



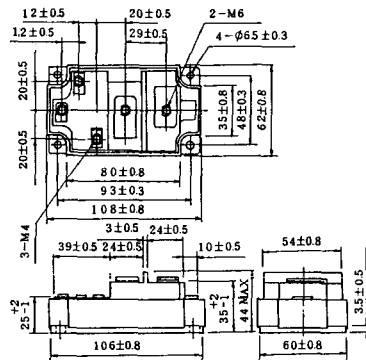
2-108A2A



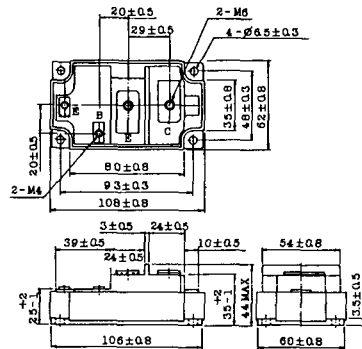
2-108B1A



2-109A3A



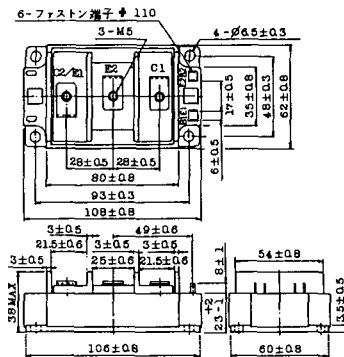
2-109A4A



2-109B3A

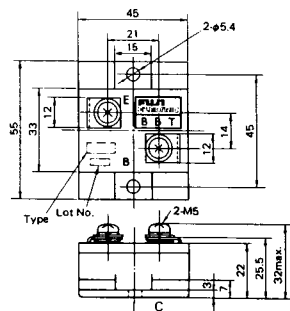


2-109B4A



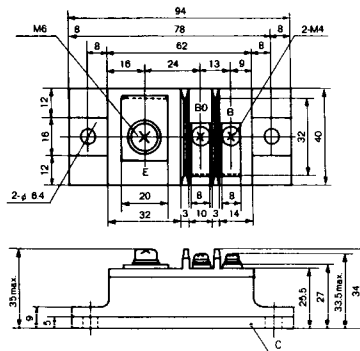
BBT-II

BBTII
1D200A-020



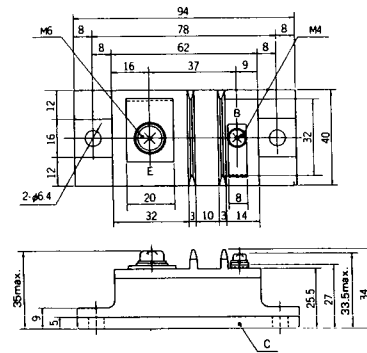
BBT-III

BBTIII
ETN31-055
ETM36-030
ETN36-030
ETN35-030



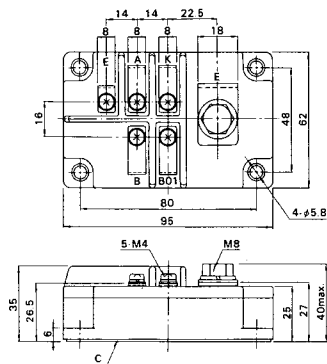
BBT-III

BBTIII
ETN01-055
ET1257

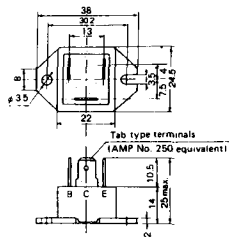


BBT-IV

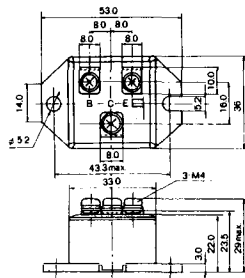
BBTIV
1D500A-030



M-101



M-102



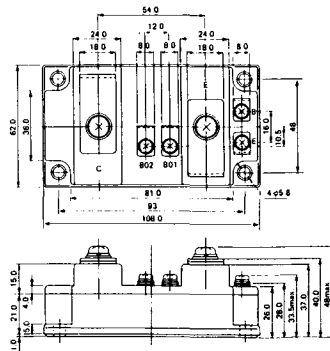
M-103



M-104



M-105



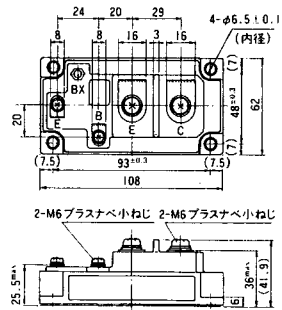
M-106



M-107



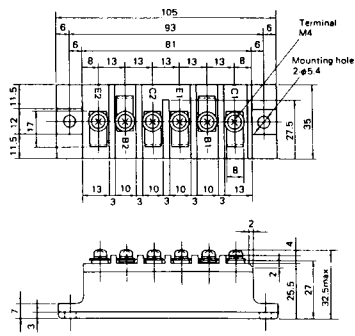
M-116



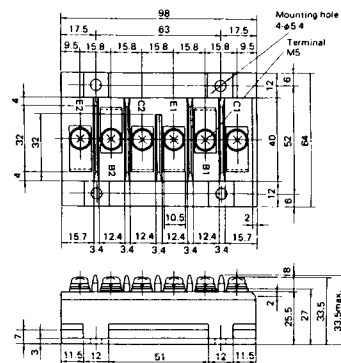
M-201



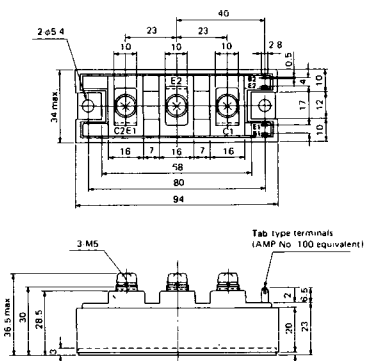
M-202



M-203



M-204



M-205



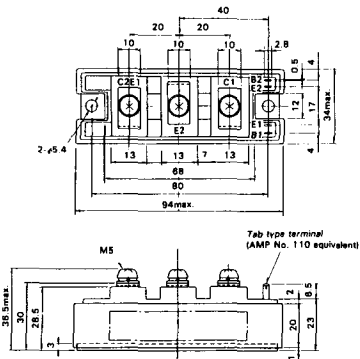
M-206



M-207



M-208



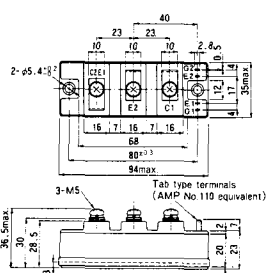
M-209



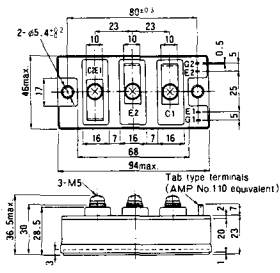
M-210



M-211



M-212



M-213

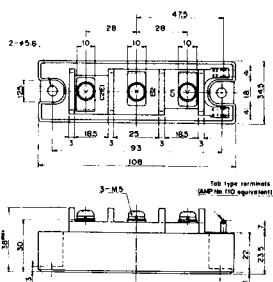


M-214

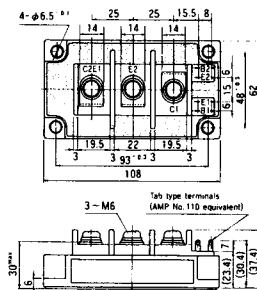
M-215



M-216



M-217



M-218



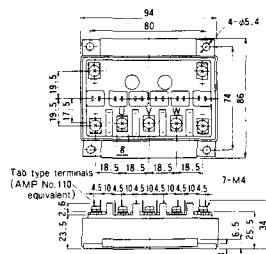
M-219



M-607



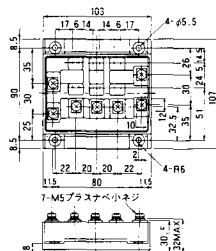
M-608



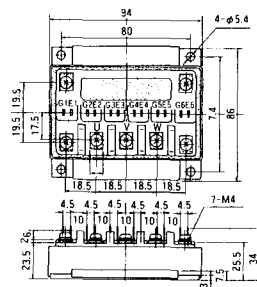
M-609



M-610



M-616



M-3C1A



M-3D6A



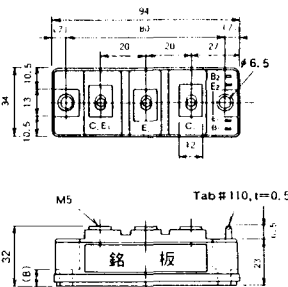
M-3E6A



M-4A1A



M-4A2A



M-4A1B



M-4A2B



M-4B2A



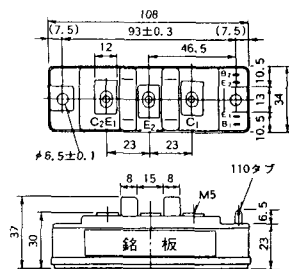
M-5A1A



M-5A1B



M-5A2A



M-5B2A



M-5C2A



M-5D2A



M-6A1A



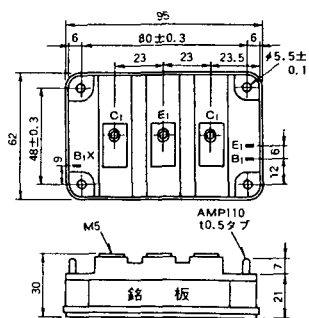
M-7A1A



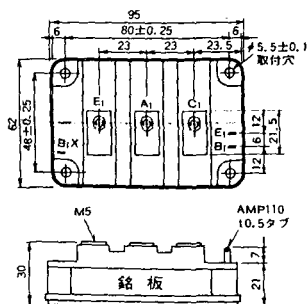
M-7B1A



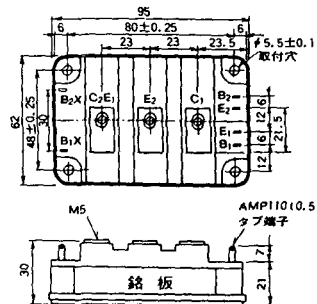
M-8A1A



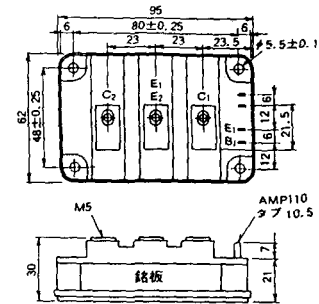
M-8A1B



M-8A2A



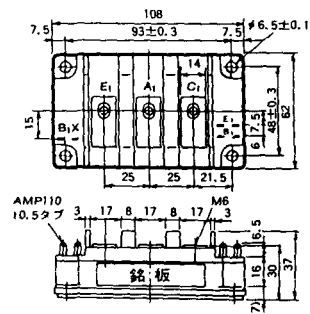
M-8A2B



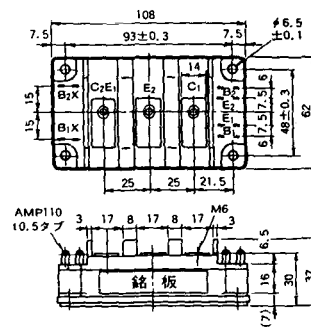
M-8B2A



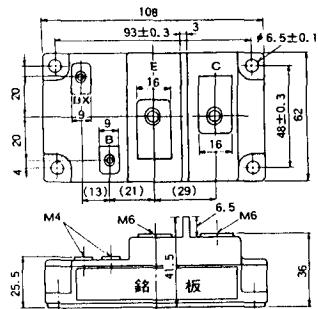
M-9A1A



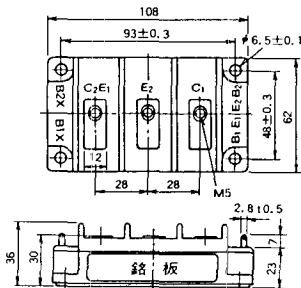
M-9A2A



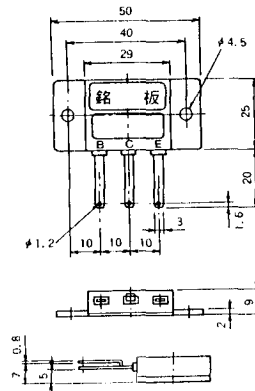
M-9B1A



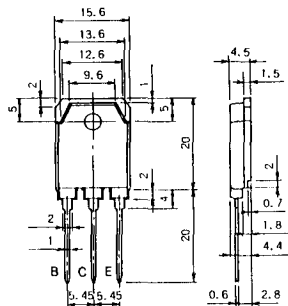
M-9C2A



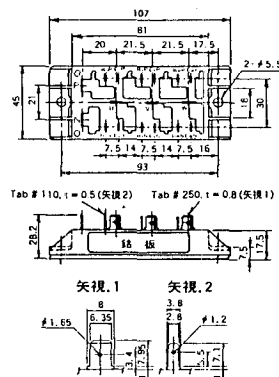
M-1A1B



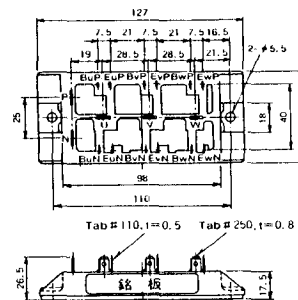
M-1A1C



M-2E6B



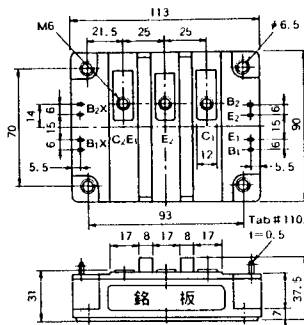
M-2E6C



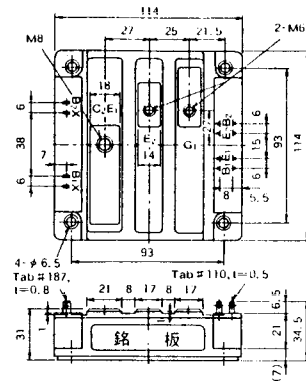
M-10A2A



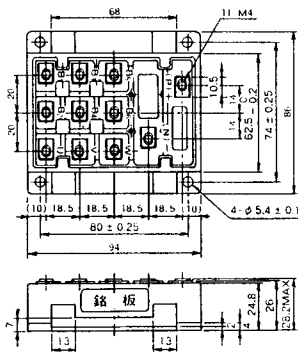
M-10A2B



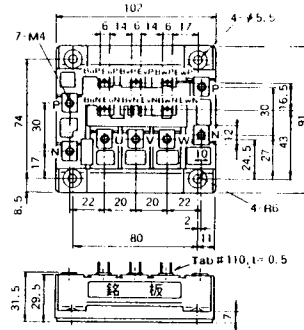
M-11A2A



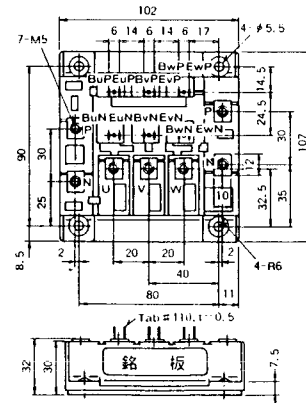
M-12A6A



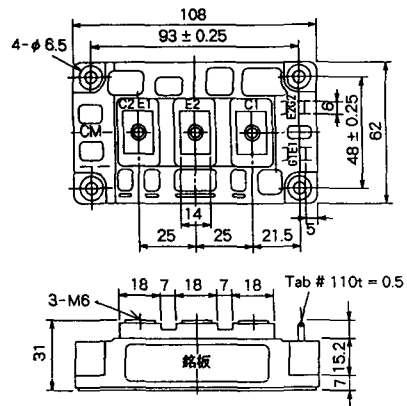
M-12B6A



M-12B6B



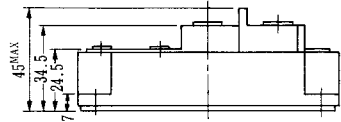
M-9D2B



M-10A2C

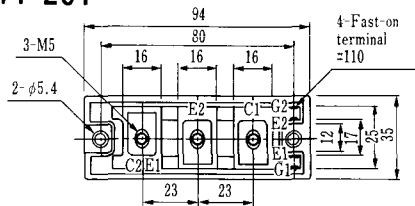


H-101



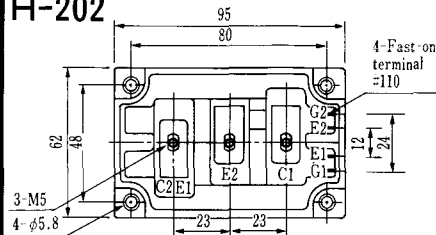
Weight :480g

H-201



Weight: 200g

H-202



Weight: 360g

LF-J



LF-K

