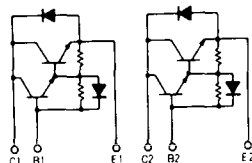


トランジスタ・モジュール (NPN, ダーリントン接続, 2個内蔵)

- ダーリントン・トランジスタを2個内蔵
- フリーホイール・ダイオード付
- 絶縁形
- 直流電流増幅率は100以上(定格電流にて)
- UL認定品: No. E76102 (M)

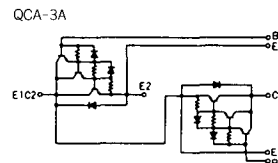
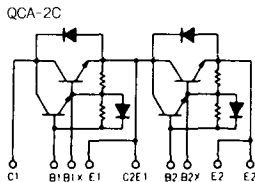
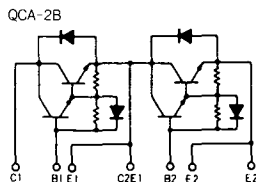
■等価回路

QBB-2A



注1. $T_c = 25^\circ\text{C}$. 注2. AC, 1分間.

型名	最大定格										電気的特性										
	V_{cbo}	V_{CEX} (sus)	V_{EBO}	I_c	I_{CP}	I_B	I_F	I_{FM}	P_c	T_j	T_{Vj}	V_{iso}	I_{cbo}	V_{CB}	I_{EBO}	V_{EB}	V_{CE0} (sus)	h_{FE}	V_{CE}	I_c	
	(V)	V_{CEX} # (V)	(V)	(A)	(A)	(A)	(A)	(A)	(W)	($^\circ\text{C}$)	($^\circ\text{C}$)	(V)	最大 (mA)	(V)	最大 (mA)	(V)	最小 (A)	最小 (V)	(V)	(A)	
QBB100A40	400	400	10	100	200	6.0	100		620	150	-40~125	2500	1.0	400	400	10	300	1.0	75/100	2/5	100
QBB100A60	600	600	10	100	200	6.0	100		620	150	-40~125	2500	1.0	600	400	10	450	1.0	75/100	2/5	100
QBB150A40	400	400	10	150	300	9.0	150		690	150	-40~125	2500	1.0	400	500	10	300	1.0	75/100	2/5	150
QBB150A60	600	600	10	150	300	9.0	150		690	150	-40~125	2500	1.0	600	500	10	450	1.0	75/100	2/5	150
QCA30B40	400	400	10	30	60	2.0	30		250	150	-40~125	2500	1.0	400	300	10	300	1.0	75/100	2/5	30
QCA30B60	600	600	10	30	60	2.0	30		250	150	-40~125	2500	1.0	600	300	10	450	1.0	75/100	2/5	30
QCA50B40	400	400	10	50	100	3.0	50		300	150	-40~125	2500	1.0	400	300	10	300	1.0	75/100	2/5	50
QCA50B60	600	600	10	50	100	3.0	50		300	150	-40~125	2500	1.0	600	300	10	450	1.0	75/100	2/5	50
QCA50AA100	1000	1000	7	50		3.0	50		400	150	-40~125	2500	1.0	1000	200	7			75/100	2.8/5	50
QCA50AA120	1200	1200	10	50		3.0	50		400	150	-40~125	2500	1.0	1200	300	10			75	5	50
QCA75A40	400	400	10	75	150	4.5	75		350	150	-40~125	2500	1.0	400	300	10	300	1.0	75/100	2/5	75
QCA75A60	600	600	10	75	150	4.5	75		350	150	-40~125	2500	1.0	600	300	10	450	1.0	75/100	2/5	75
QCA75AA100	1000	1000	7	75		4.0	75		500	150	-40~125	2500	1.0	1000	200	7			75/100	2.8/5	75
QCA75AA120	1200	1200	10	75		4.0	75		500	150	-40~125	2500	1.0	1200	300	10			75	5	75
QCA75BA60	600	600	10	75	150	4.5	75		350	150	-40~125	2500	1.0	600	300	10	450	1.0	750	2.5	75
QCA100A40	400	400	10	100	200	6.0	100		620	150	-40~125	2500	1.0	400	400	10	300	1.0	75/100	2/5	100
QCA100A60	600	600	10	100	200	6.0	100		620	150	-40~125	2500	1.0	600	400	10	450	1.0	75/100	2/5	100
QCA100AA100	1000	1000	7	100		5.0	100		800	150	-40~125	2500	2.0	1000	400	7			75/100	2.8/5	100
QCA100AA120	1200	1200	10	100		5.0	100		800	150	-40~125	2500	2.0	1200	600	10			75	5	100
QCA100BA60	600	600	10	100	200	6.0	100		620	150	-40~125	2500	2.0	600	400	10	450	1.0	750	2.5	100



(T _j = 25°C)										エミッタ・コレクタ間ダイオード					熱抵抗		等価回路	外形図	記	事	型	名	
飽和電圧 (V)		I _c	I _B	スイッチング時間 (μs)			I _{B1}	I _{B2}	V _{CC}	I _C	V _F (V)	I _F (μs)	t _{rr} (μs)	* 標準値	di/dt (A/μs)	R _{th (j-c)} (°C/W)							
V _{CE}	V _{BE}			t _{on}	t _{off}	t _r										最大							最大
2.0	2.5	100	1.4	2.0	12	3.0	2.0	-2.0	300	100	1.4	100				0.2	0.6	QBB-2A	S-98B1B	UL認定品	QBB100A40		
2.0	2.5	100	1.4	2.0	12	3.0	2.0	-2.0	300	100	1.4	100				0.2	0.6	QBB-2A	S-98B1B	UL認定品	QBB100A60		
2.0	2.5	150	2.0	2.0	12	3.0	2.0	-2.0	300	150	1.4	150				0.18	0.6	QBB-2A	S-98B1B	UL認定品	QBB150A40		
2.0	2.5	150	2.0	2.0	12	3.0	2.0	-2.0	300	150	1.4	150				0.18	0.6	QBB-2A	S-98B1B	UL認定品	QBB150A60		
2.0	2.5	30	0.4	1.0	12	2.0	0.6	-0.6	300	30	1.4	30				0.5	1.6	QCA-2B	S-94B1A	UL認定品	QCA30B40		
2.0	2.5	30	0.4	1.0	12	2.0	0.6	-0.6	300	30	1.4	30				0.5	1.6	QCA-2B	S-94B1A	UL認定品	QCA30B60		
2.0	2.5	50	0.67	1.0	12	2.0	1.0	-1.0	300	50	1.4	50				0.4	1.3	QCA-2B	S-94B1A	UL認定品	QCA50B40		
2.0	2.5	50	0.67	1.0	12	2.0	1.0	-1.0	300	50	1.4	50				0.4	1.3	QCA-2B	S-94B1A	UL認定品	QCA50B60		
2.5	3.5	50	1.0	2.5	15	3.0	1.0	-1.0	600	50	1.8	50				0.31	1.2	QCA-3A	S-94B1B	UL認定品	QCA50AA100		
3.0	3.5	50	1.0	2.5	15	3.0	1.0	-1.0	600	50	1.8	50				0.31	1.2	QCA-3A	S-94B1B	UL認定品	QCA50AA120		
2.0	2.5	75	1.0	2.0	12	3.0	1.0	-1.0	300	75	1.4	75				0.35	1.3	QCA-2B	S-94B1A	UL認定品	QCA75A40		
2.0	2.5	75	1.0	2.0	12	3.0	1.0	-1.0	300	75	1.4	75				0.35	1.3	QCA-2B	S-94B1A	UL認定品	QCA75A60		
2.5	3.5	75	1.5	2.5	15	3.0	1.5	-1.5	600	75	1.8	75				0.25	1.2	QCA-3A	S-108B1B	UL認定品	QCA75AA100		
3.0	3.5	75	1.5	2.5	15	3.0	1.5	-1.5	600	75	1.8	75				0.25	1.2	QCA-3A	S-108B1B	UL認定品	QCA75AA120		
2.5	3.0	75	0.1	2.0	8.0	2.0	0.15	-1.5	300	75	1.9	75	0.2 *	75	-5	75	0.35	1.3	QCA-3A	S-94B1A	高H _{FE} 品	QCA75BA60	
2.0	2.5	100	1.4	2.0	12	3.0	2.0	-2.0	300	100	1.4	100				0.2	0.6	QCA-2C	S-95B1A	UL認定品	QCA100A40		
2.0	2.5	100	1.4	2.0	12	3.0	2.0	-2.0	300	100	1.4	100				0.2	0.6	QCA-2C	S-95B1A	UL認定品	QCA100A60		
2.5	3.5	100	2.0	3.0	15	3.0	2.0	-2.0	600	100	1.8	100				0.155	0.65	QCA-3B	S-108B2A	UL認定品	QCA100AA100		
3.0	3.5	100	2.0	3.0	15	3.0	2.0	-2.0	600	100	1.8	100				0.155	0.65	QCA-3B	S-108B2A	UL認定品	QCA100AA120		
2.5	3.0	100	0.13	2.0	8.0	2.0	0.2	-2.0	300	100	1.8	100	0.2 *	100	-5	100	0.2	0.6	QCA-3B	S-95B1A	高H _{FE} 品	QCA100BA60	

FD-1



FD-2



FD-3



FD-4



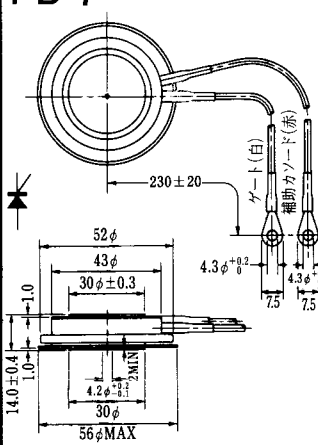
FD-5



FD-6



FD-7



FD-8



FD-9



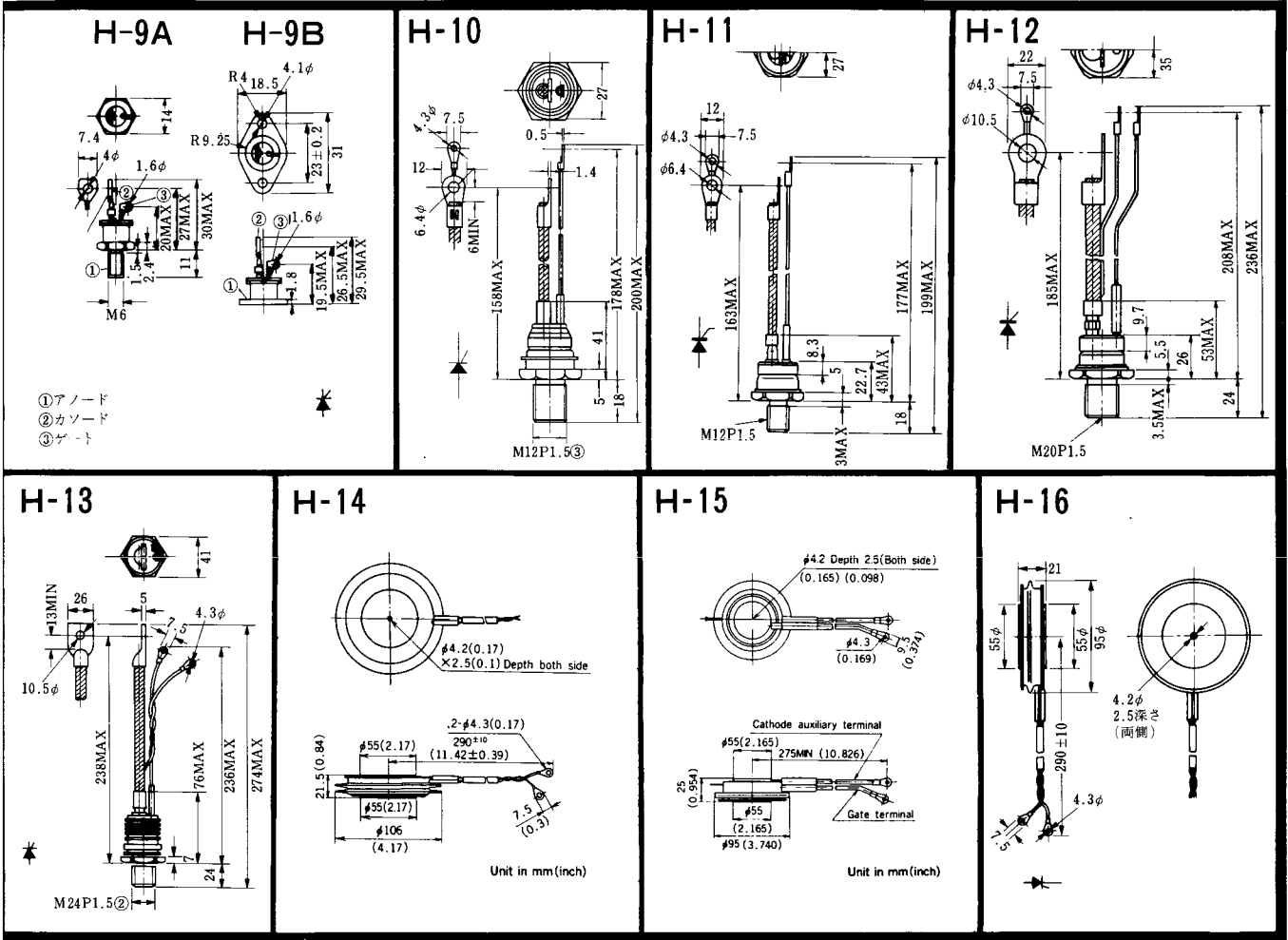
FD-10



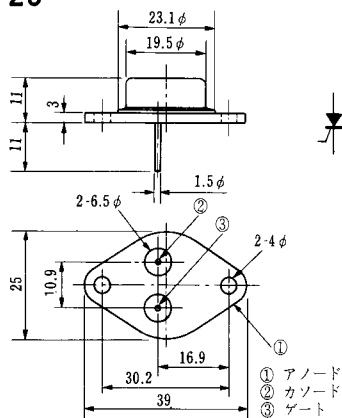
FD-11

FD-12



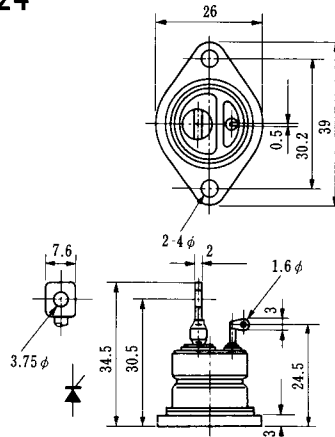


H-23

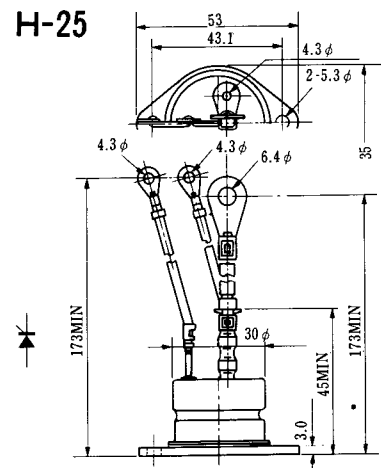


① アノード
② カソード
③ ゲート

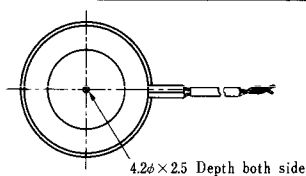
H-24



H-25

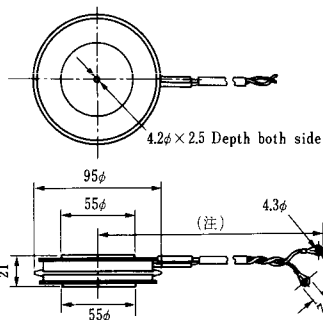


H-26



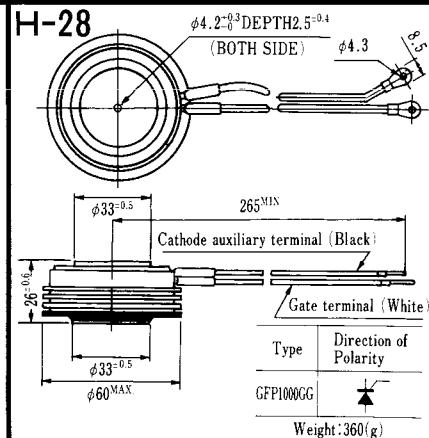
4.2φ × 2.5 Depth both side

H-27



(注) CC11V : 400 ± 10
CF11V : 250 ± 10

H-28



Cathode auxiliary terminal (Black)

Gate terminal (White)

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

CA12	
------	--

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

CF11V	
-------	--

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

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

Weight: 360(g)

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



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



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

M-1



M-2



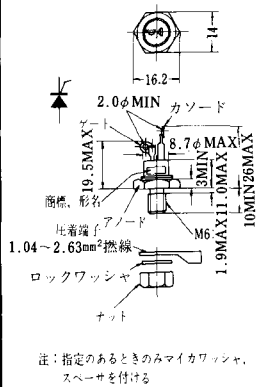
M-3



M-4



M-5



M-6



M-7



M-8



M-9



M-10



M-11



M-12



M-13



M-14



M-15

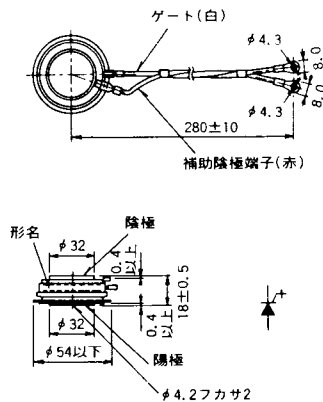


M-16

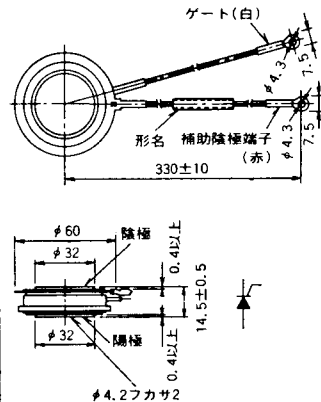




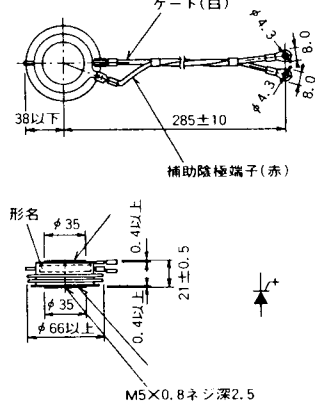
M-25



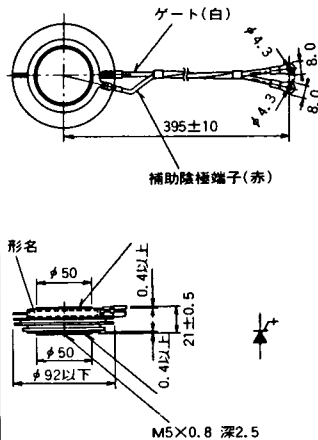
M-26



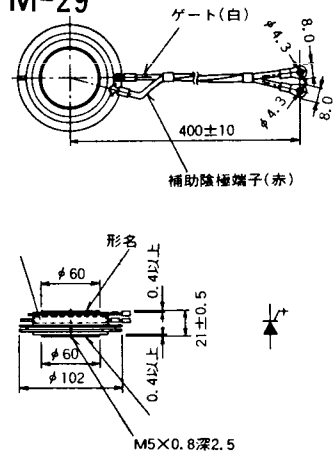
M-27



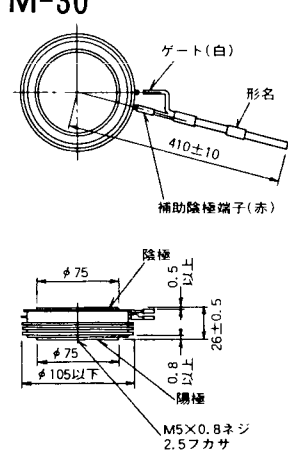
M-28



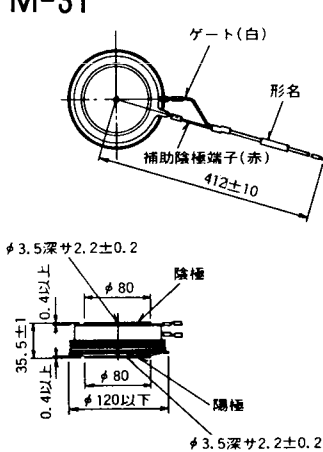
M-29



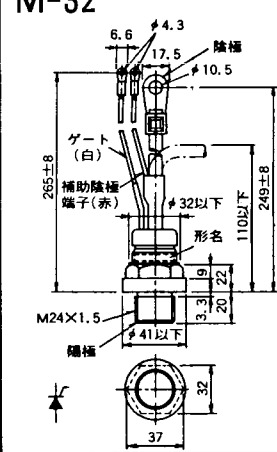
M-30



M-31



M-32



M-33



M-34



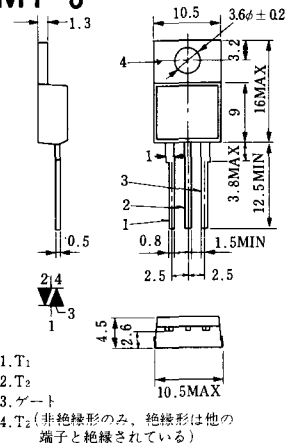
MT-1



MT-2



MT-3



MT-4



MT-5



MT-6



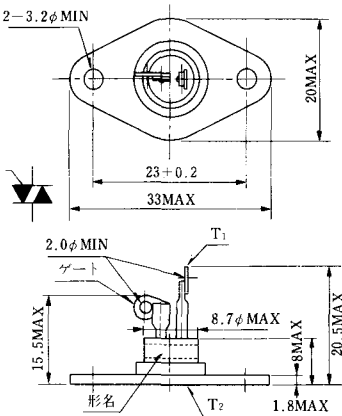
MT-7



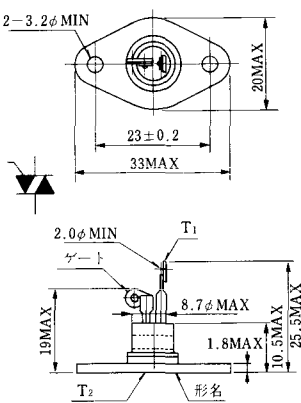
MT-8



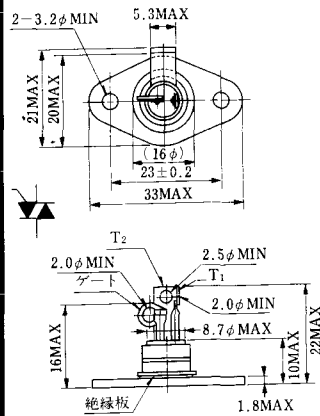
MT-9



MT-10



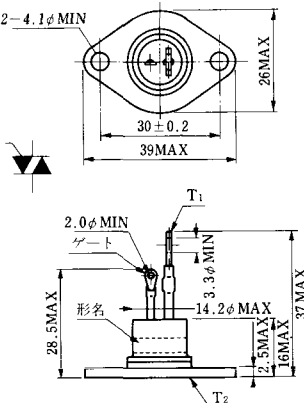
MT-11



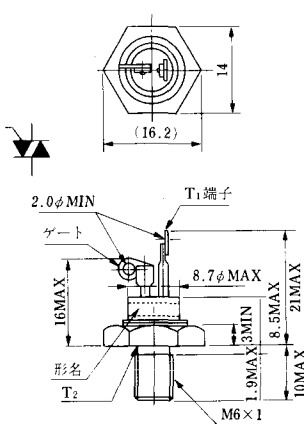
MT-12



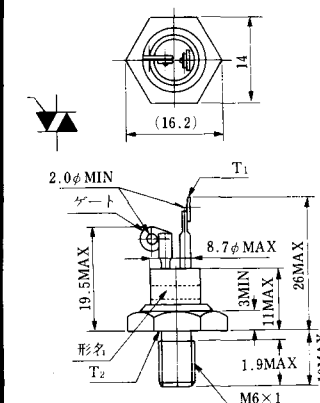
MT-13



MT-14



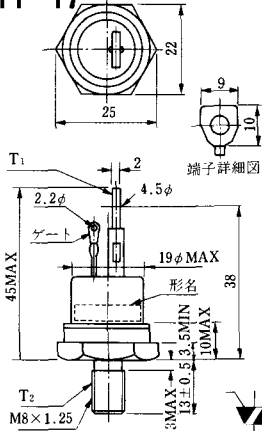
MT-15



MT-16



MT-17



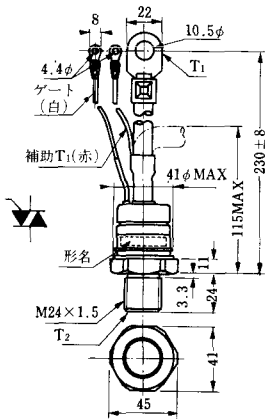
MT-18



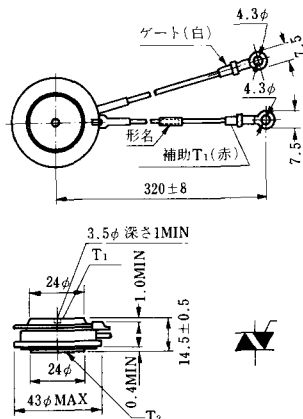
MT-19



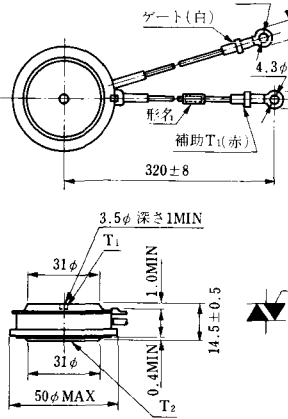
MT-20



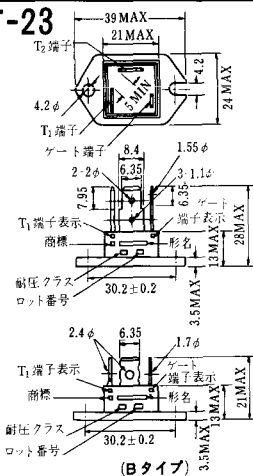
MT-21

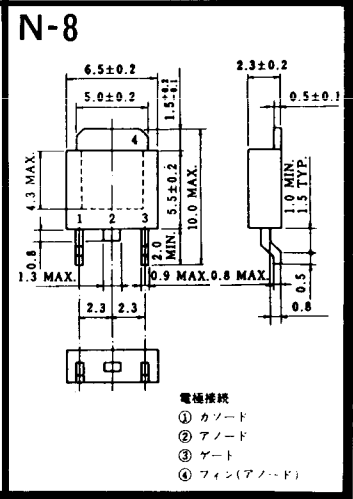
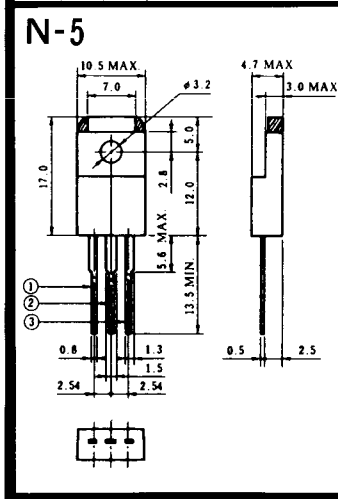
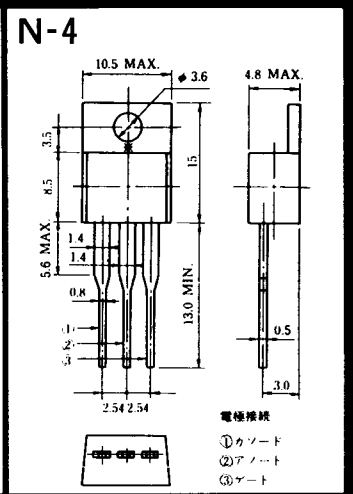
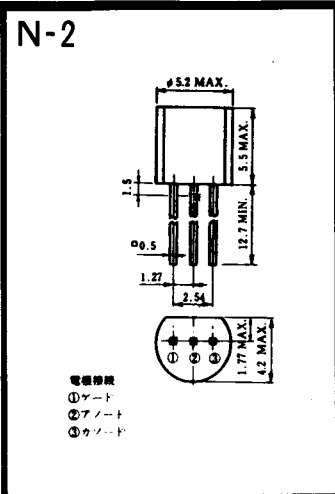
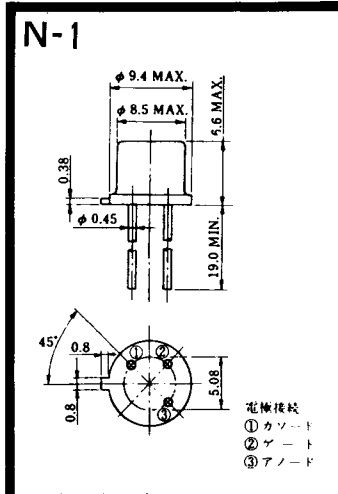


MT-22



MT-23





NI-1



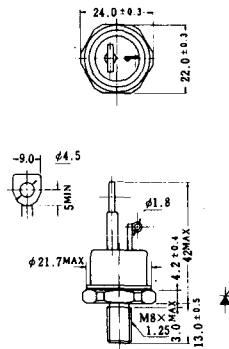
NI-2

29RD



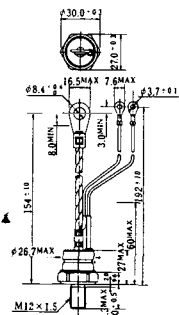
NI-3

39RC
59RC
39RF
59RF



NI-4

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



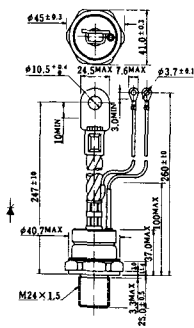
NI-5

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



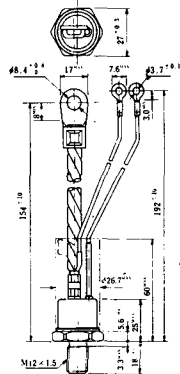
NI-6

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



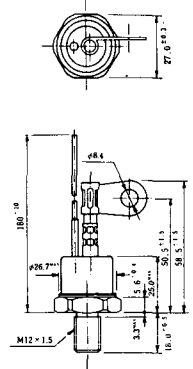
NI-7

89RW_{JL}
129RW_{JL}



NI-8

89RW
129RW





NI-24

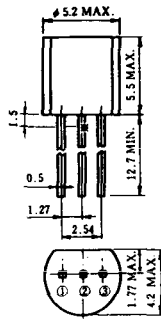
2001PGB^r JE



NI-25

NI-26

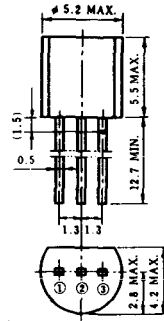
NT-1



電極接続

- ① T₁
- ② ゲート
- ③ T₂

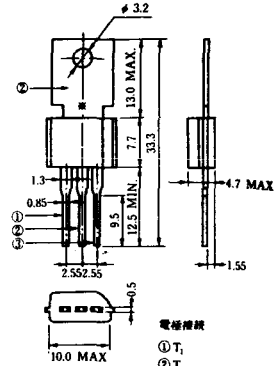
NT-2



電極接続

- ① T₁
- ② ゲート
- ③ T₂

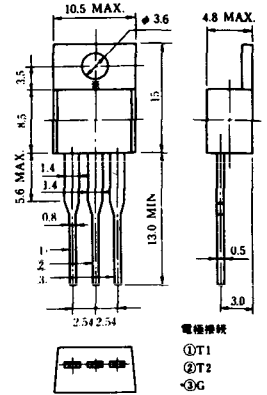
NT-3



電極接続

- ① T₁
- ② T₂
- ③ ゲート

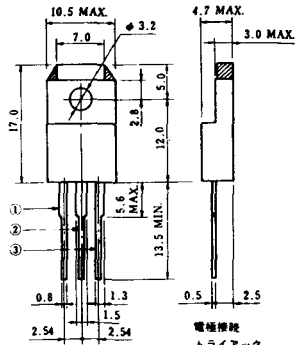
NT-4



電極接続

- ① T₁
- ② T₂
- ③ G

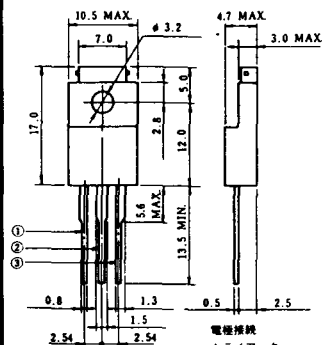
NT-5



電極接続
トライアック

- ① T₁
- ② T₂
- ③ ゲート

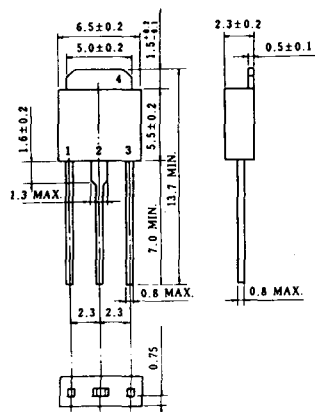
NT-6



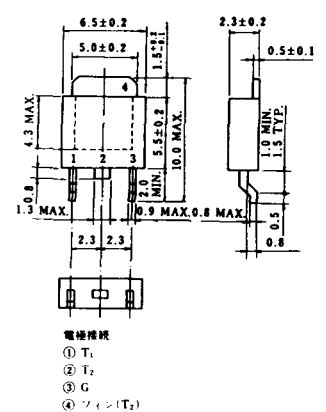
電極接続
トライアック

- ① T₁
- ② T₂
- ③ ゲート

NT-7



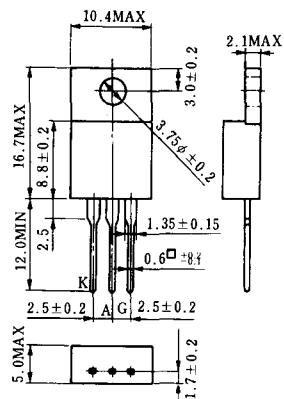
NT-8



電極接続

- ① T₁
- ② T₂
- ③ G
- ④ シフト(T₂)

S-1



ST-1



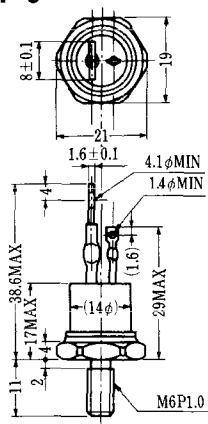
SA-1



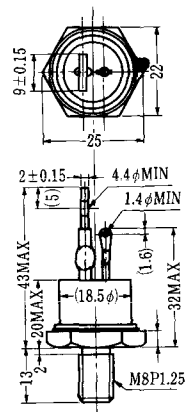
SA-2



SA-3



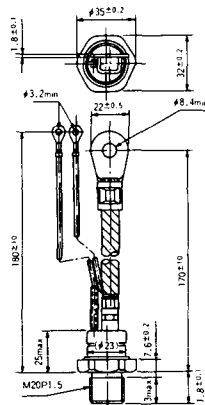
SA-4



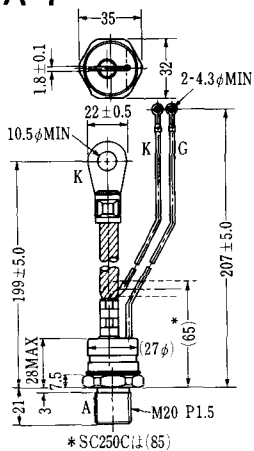
SA-5



SA-6

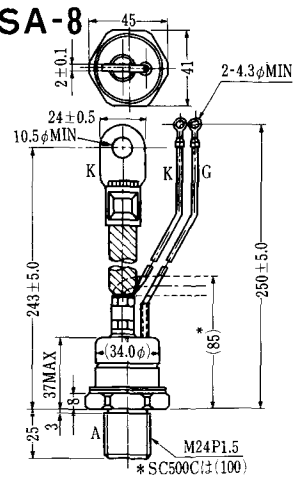


SA-7



* SC250C:(1)(85)

SA-8



* SC500C:(1)(100)

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)

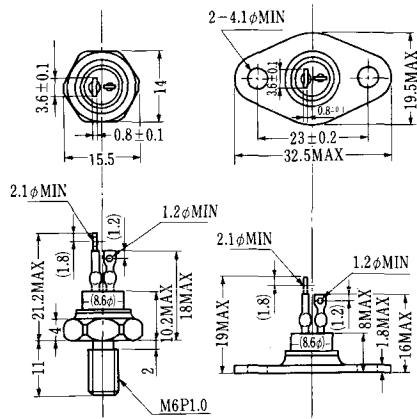
SAT-2



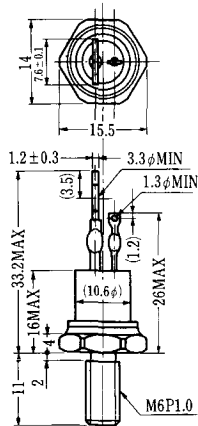
SAT-3



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



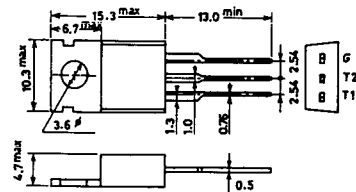
1142



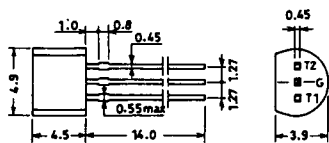
1144



1155

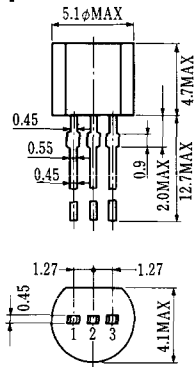


1192A



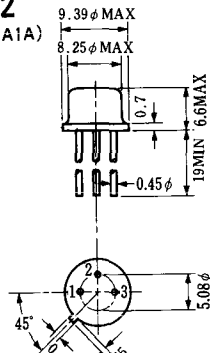
G: Gate

T-1 (13-5A1A)



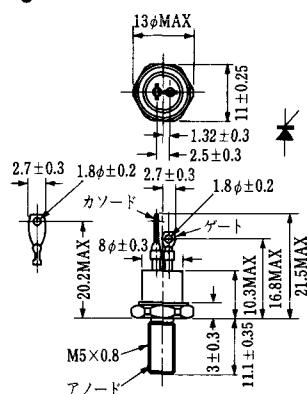
- 1 ゲート
- 2 アノード
- 3 カソード

T-2 (13-8A1A)



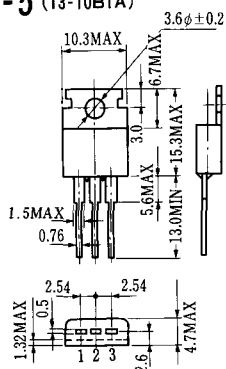
1. カソード
2. ゲート
3. アノード(ケース)

T-3 (13-8C1A)



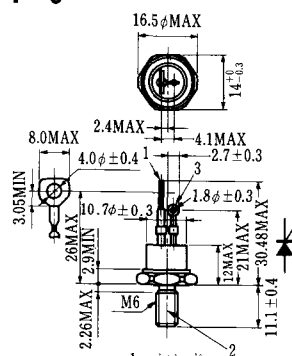
- 1 カソード
- 2 アノード
- 3 ゲート

T-5 (13-10B1A)



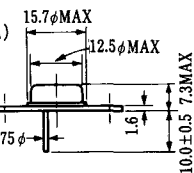
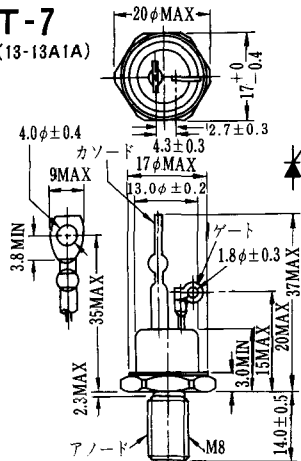
- 1 カソード
- 2 アノード
- 3 ゲート

T-6 (13-11D1A)



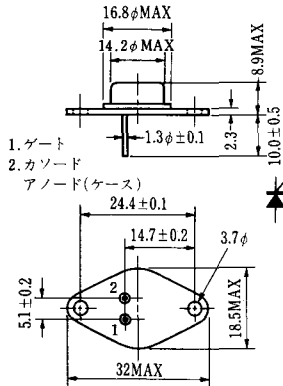
- 1 カソード
- 2 アノード
- 3 ゲート

T-7 (13-13A1A)



1. ゲート
2. カソード
3. アノード(ケース)

T-9 (13-14A1A)



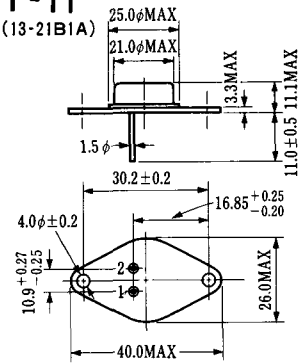
1. ゲート
2. カソード
- アノード(ケース)

T-10 (13-19A1A)



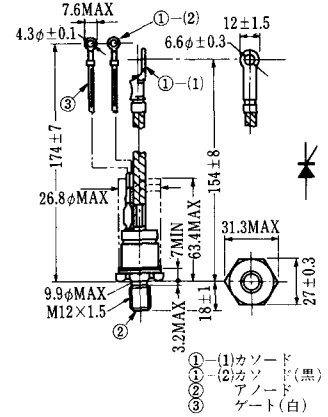
1. カソード
2. アノード
3. ゲート

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)



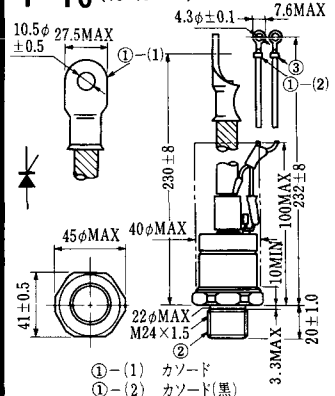
- 1-(1) カソード
- 1-(2) カソード(黒)
- 2 アノード
- 3 ゲート(白)

T-15 (13-35C1B)



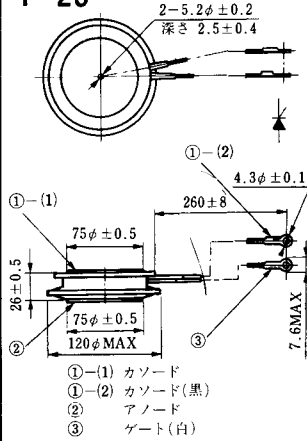
- ① (1) カソード
- ① (2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-16 (13-40B1A)

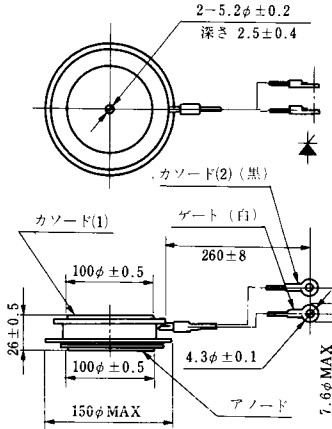


- ① (1) カソード
- ① (2) カソード(黒)
- ② アノード
- ③ ゲート(白)

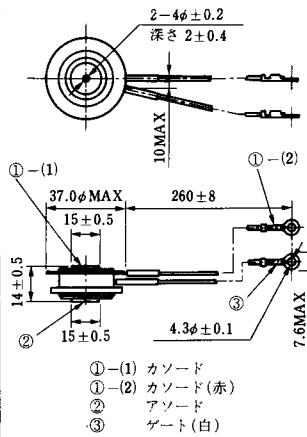
T-25 (13-120A2A)



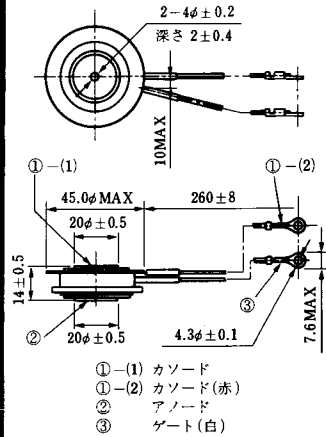
T-26 (13-150A1A)



T-27 (13-37A1A)



T-28 (13-45E1A)



T-29 (13-51A1A)



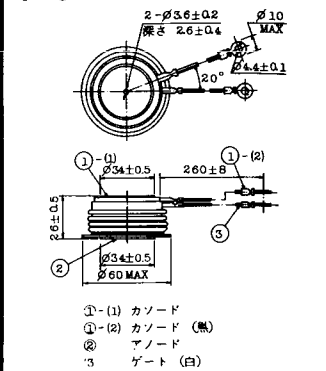
T-30 (13-57A1A)



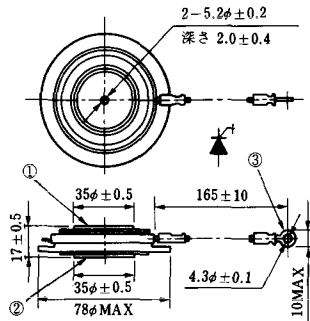
T-31 (13-100E1A)



T-32 (13-60E3A)

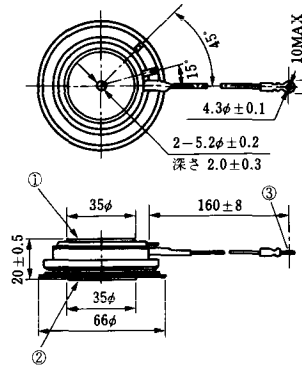


T-33 (13-78B1A)



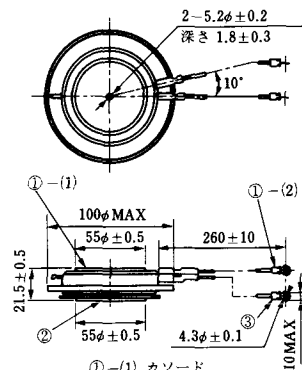
- ① カソード
- ② アノード
- ③ ゲート

T-34 (13-66A1A)



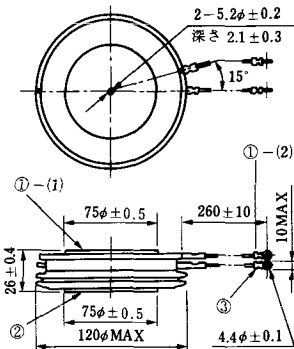
- ① カソード
- ② アノード
- ③ ゲート

T-35 (13-100D1A)



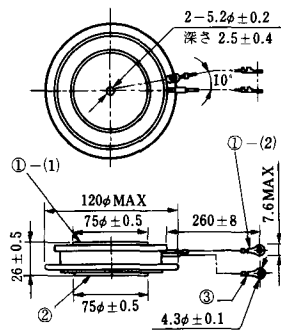
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-36 (13-120E1A)



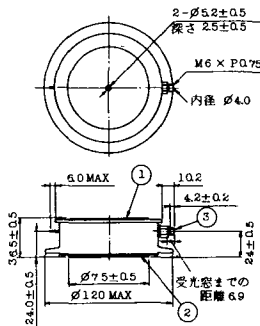
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-37 (13-120A1A)



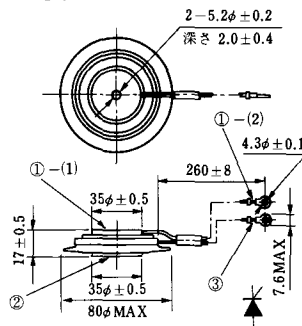
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-38 (13-120C1A)



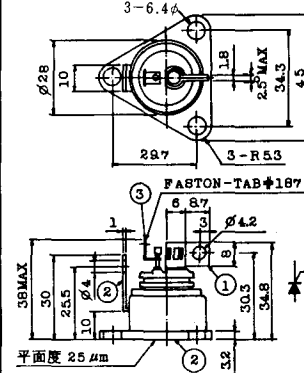
- ① カソード
- ② アノード
- ③ ゲート

T-39 (13-80B1A)



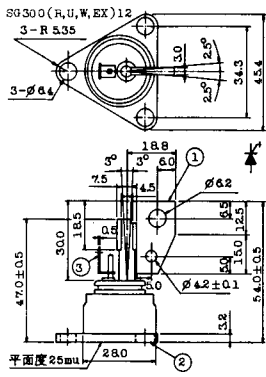
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-40 (13-28A1A)



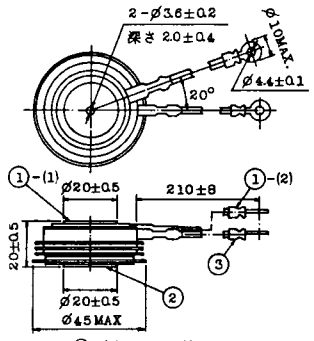
- 1. カソード
- 2. アノード
- 3. ゲート

T-41 (13-28A2A)



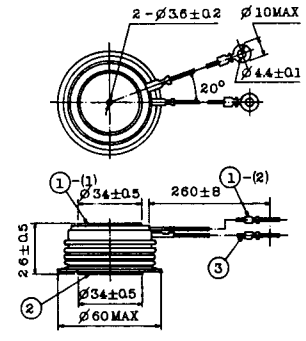
- 1 カソード
- 2 アノード
- 3 ゲート

T-42 (13-45F1A)



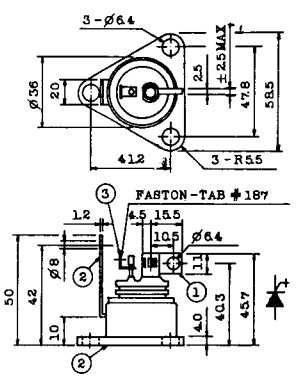
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-43 (13-60E2A)



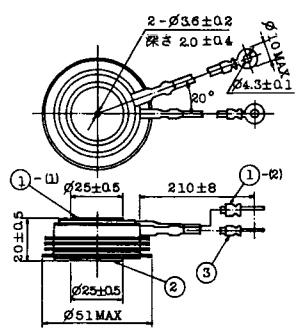
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-44 (13-36A1A)



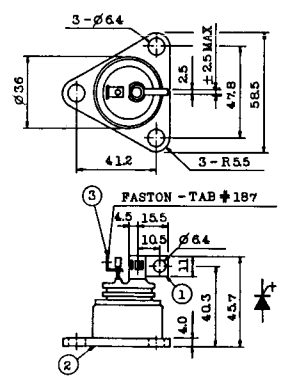
- 1 カソード
- 2 アノード
- 3 ゲート

T-45 (13-51B1A)



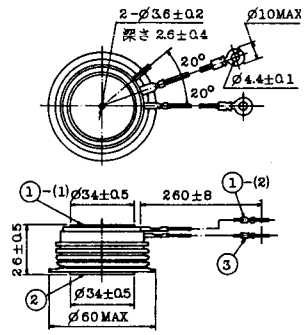
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-46 (13-36B1A)



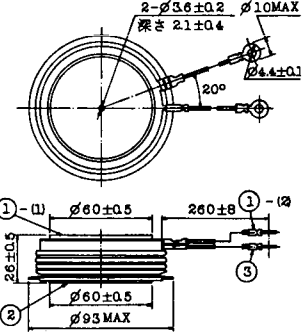
- 1 カソード
- 2 アノード
- 3 ゲート

T-47 (13-60E1A)



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

T-48 (13-93C1A)



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

T-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)



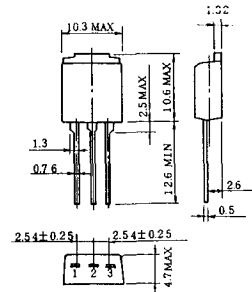
1. カソード
2. アノード
3. ゲート

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)



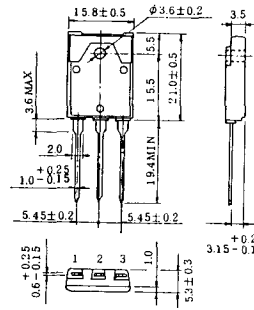
1. ゲート
2. アノード
3. カソード

T-62 (13-10H1A)



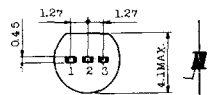
1. カソード
2. アノード
3. ゲート

T-63 (13-16A1B)



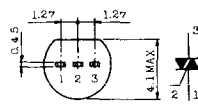
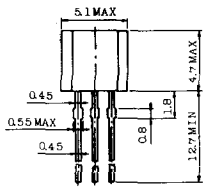
1. カソード
2. アノード
3. ゲート

TT-1



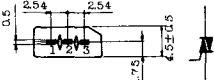
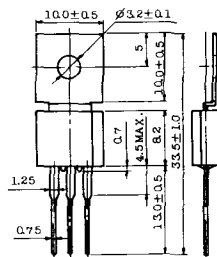
- 1 ゲート
- 2 T₂
- 3 T₁

TT-2



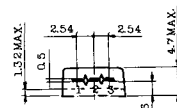
- 1 T₁
- 2 ゲート
- 3 T₂

TT-3



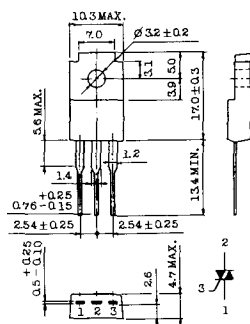
- 1 T₁
- 2 T₂
- 3 ゲート

TT-4



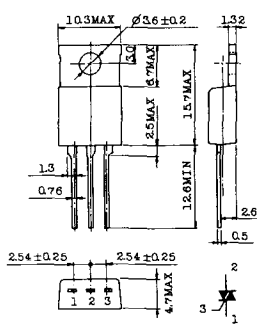
- 1 T₁
- 2 T₂
- 3 ゲート

TT-5



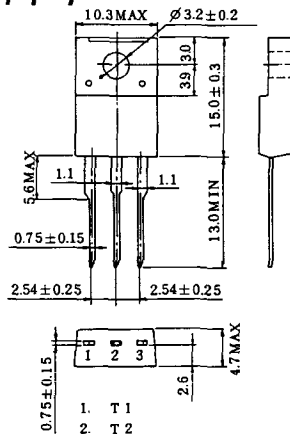
- 1 T₁
- 2 T₂
- 3 ゲート

TT-6



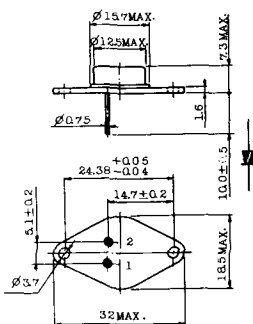
- 1 T₁
- 2 T₂ (放熱板)
- 3 ゲート

TT-7



- 1 T₁
- 2 T₂
- 3 ゲート

TT-8



- 1 ゲート
- 2 T₁
- T₂ (ケース)

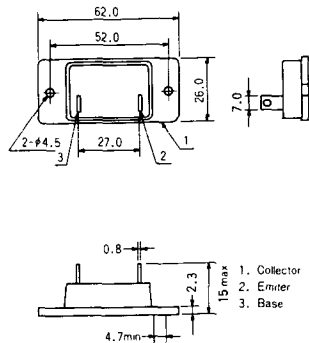


TS-8

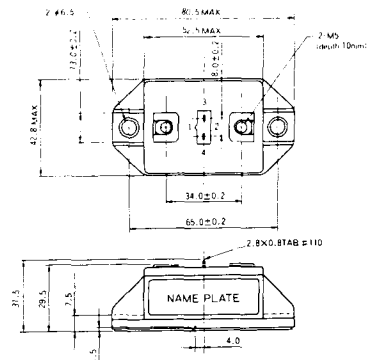


1. ベース
2. エミッタ
コレクタ
(ケース)

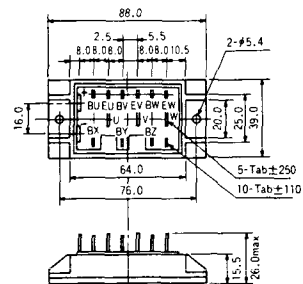
S-62A1A



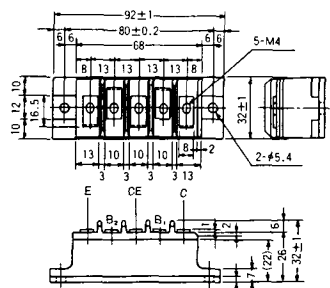
S-80A1A



S-88D1A



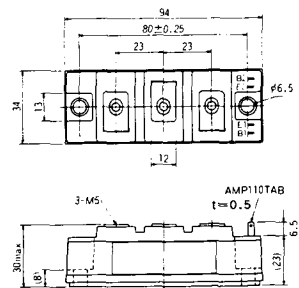
S-92B1A



S-94B1A



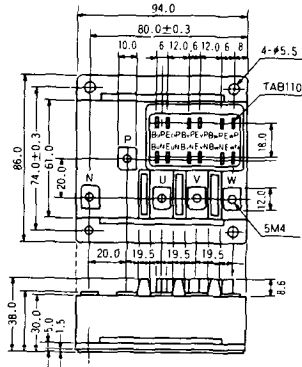
S-94B1B



S-94B2A



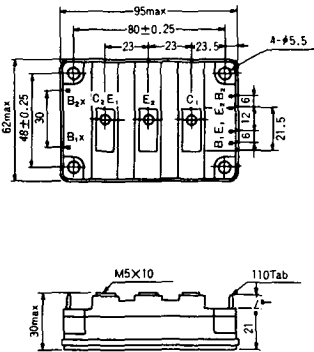
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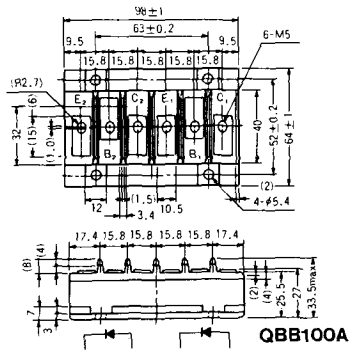
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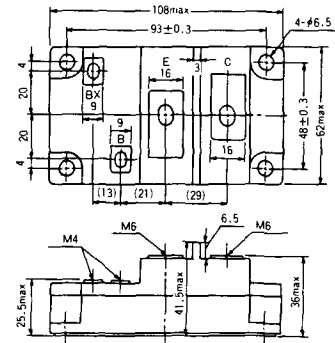
S-95B1A



S-98B1B



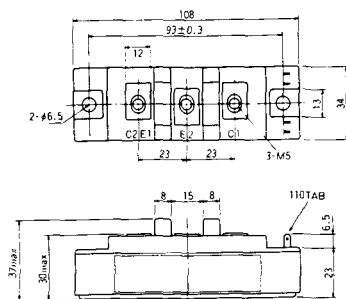
S-108A2A



S-108B1A



S-108B1B



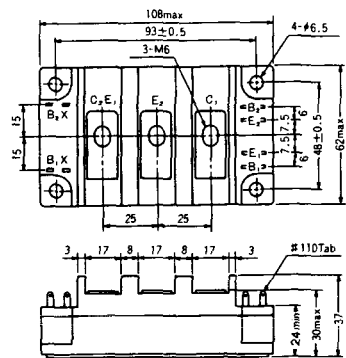
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S-108B2A



S-108B2B



2-22B1A



2-27A4A



2-33C1A



2-33D1A



2-33F1A



2-37A1A



2-48A3A



2-48A3B



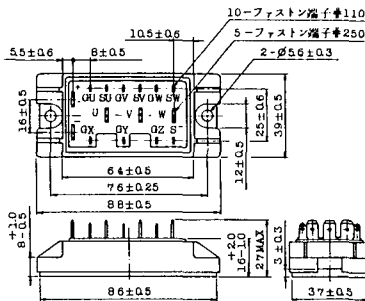
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2-64A2A



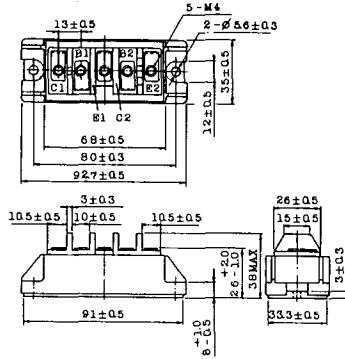
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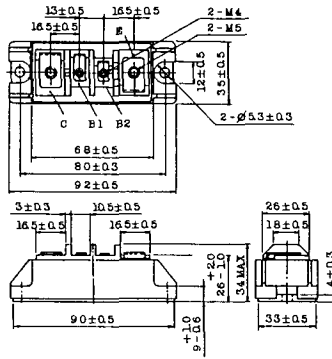
2-68A2A



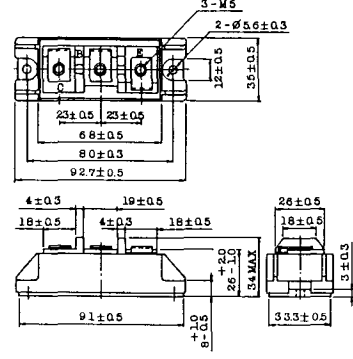
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2-68C1A



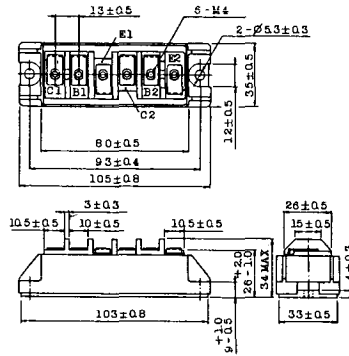
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2-72A3A



2-80A1A



2-80B1A



2-94D1A



2-96A3A



2-96A4A



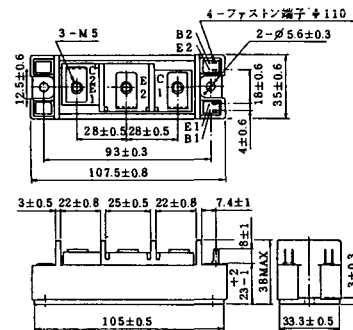
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2-98C2A



2-108A2A



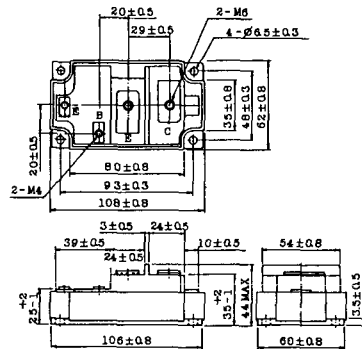
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2-109A3A



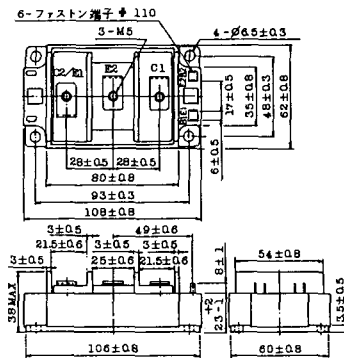
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2-109B3A



2-109B4A



M-107



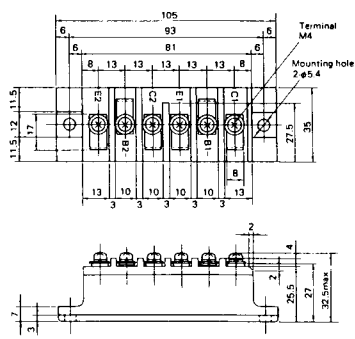
M-116



M-201



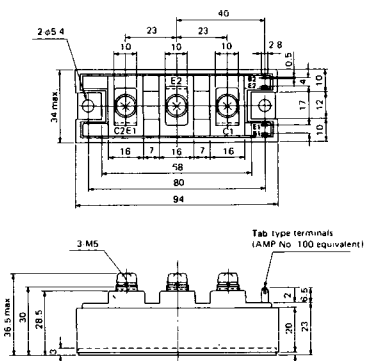
M-202



M-203



M-204



M-205



M-206



M-207



M-208



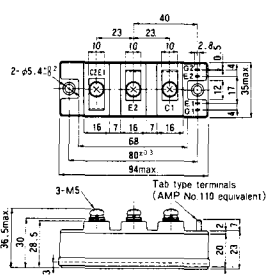
M-209



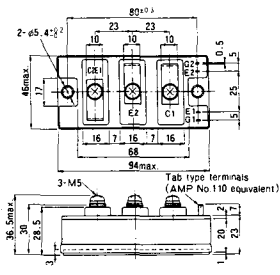
M-210



M-211



M-212



M-213

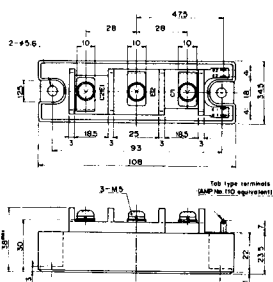


M-214

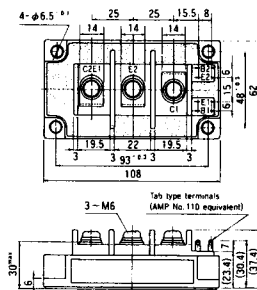
M-215



M-216



M-217



M-218



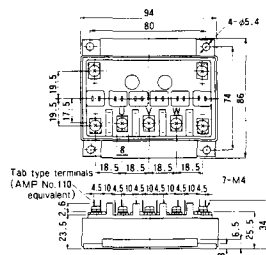
M-219



M-607



M-608



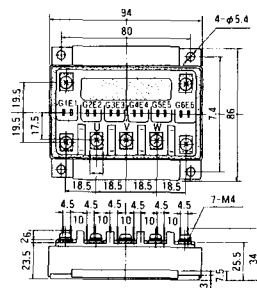
M-609



M-610



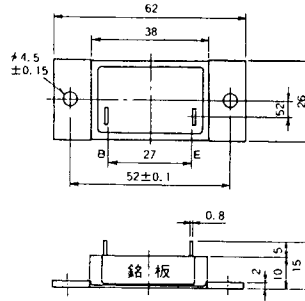
M-616



M-1A1A



M-2A1A



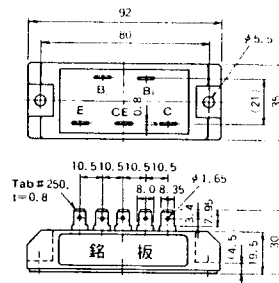
M-2B1A



M-2B2A



M-2C2A



M-2D4A



M-3C1A



M-3D6A



M-3E6A



M-4A1A



M-4A2A



M-4A1B



M-4A2B



M-4B2A



M-5A1A



M-5A1B



M-5A2A



M-5B2A



M-5C2A



M-5D2A



M-6A1A



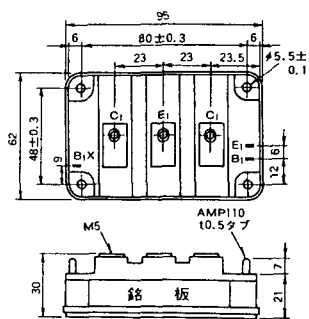
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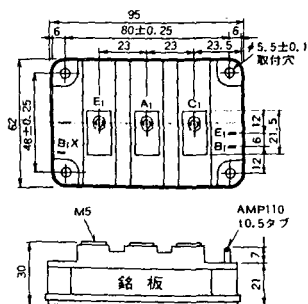
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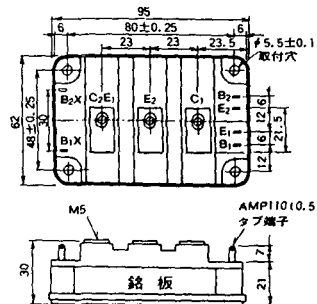
M-8A1A



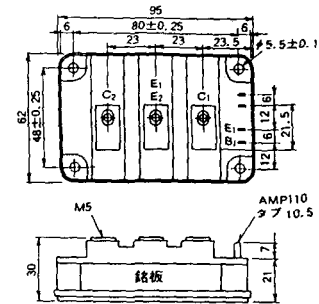
M-8A1B



M-8A2A



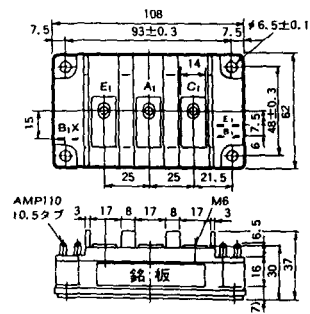
M-8A2B



M-8B2A



M-9A1A



M-9A2A



M-10A2A



M-10A2B



M-11A2A



M-12A6A



M-12B6A



M-12B6B

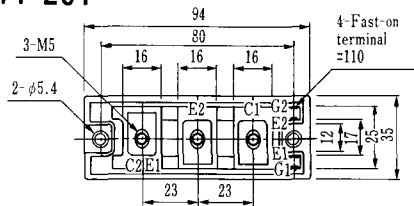


H-101



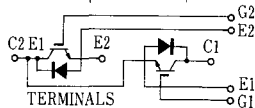
Weight :480g

H-201



Weight: 200g

H-202



Weight: 360g

LF-J



LF-K

