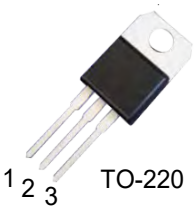
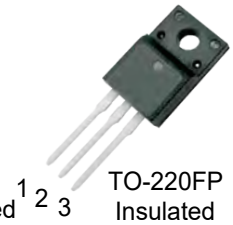
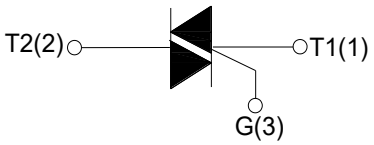
BTA04

Discrete Triacs







	VDRM/RRM V	VDSM/RSM V
BTA04-200	200	300
BTA04-400	400	500
BTA04-600	600	700
BTA04-800	800	900
BTA04-1000	1000	1100
BTA04-1200	1200	1300

ELECTRICAL CHARACTERISTICS (T_j=25°C unless otherwise specified)

Symbol	Test Condition	Quadrant		Value				Unit
				TW	SW	CW	BW	
I_{GT}	V_D =12V R_L =33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	5	10	35	50	mA
V_{GT}		Ⅰ-Ⅱ-Ⅲ	MAX	1.5				V
V_{GD}	V_D =V_{DRM} T_j =125°C R_L =3.3KΩ	Ⅰ-Ⅱ-Ⅲ	MIN	0.2				V
I_L	I_G =1.2I_{GT}	Ⅰ-Ⅲ	MAX	10	20	50	70	mA
		Ⅱ		15	35	60	80	
I_H	I_T =100mA		MAX	10	15	35	60	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j =125°C		MIN	20	40	400	1000	V/μs
(dV/dt)c	(dI/dt)c=1.8A/ms T_j =125°C		MIN	0.5	1	/	/	V/μs

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ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
T_{stg}	Storage junction temperature range		-40 - 150	°C
T_j	Operating junction temperature range		-40 - 125	°C
V_{DRM}	Repetitive peak off-state voltage (T_j=25°C)		600/800	V
V_{RRM}	Repetitive peak reverse voltage (T_j=25°C)		600/800	V
V_{DSM}	Non repetitive surge peak Off-state voltage		V_{DRM} +100	V
V_{RSM}	Non repetitive peak reverse voltage		V_{RRM} +100	V
$I_{T(RMS)}$	RMS on-state current	TO-251/ TO-252 (T_C=86°C)	4	A
		TO-220B(Non-Ins) (T_C=95°C)		
		TO-220FP(Ins) (T_C=80°C)		
I_{TSM}	Non repetitive surge peak on-state current (full cycle, F=50Hz)		40	A
I^2t	I^2t value for fusing (t_p=10ms)		8	A^2s
dI/dt	Critical rate of rise of on-state current (I_G =2×I_{GT})		50	A/μs
I_{GM}	Peak gate current		4	A
$P_{G(AV)}$	Average gate power dissipation		1	W
P_{GM}	Peak gate power		5	W

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STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM} =5.5A tp=380μs	T_j=25°C	1.55	V
I_{DRM}	V_D =V_{DRM} V_R =V_{RRM}	T_j=25°C	10	μA
I_{RRM}		T_j=125°C	0.75	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-251/ TO-252	4.2	°C/W
		TO-220B(Non-Ins)	2.4	
		TO-220FP(Ins)	4.5	

ORDERING INFORMATION

BTA 04 H -600 TW

- BTA: Triacs
- 04: $I_{T(RMS)}$:4A
- H: H:TO-251K:TO-252; F:TO-220FP(Ins); B:TO-220B(Non-Ins)
- -600: 600:V_{DRM} /V_{RRM}≥600V; 800:V_{DRM} /V_{RRM}≥800V
- TW: I_{GT1-3}≤5mA; SW: I_{GT1-3}≤10mA; CW: I_{GT1-3}≤35mA; BW: I_{GT1-3}≤50mA

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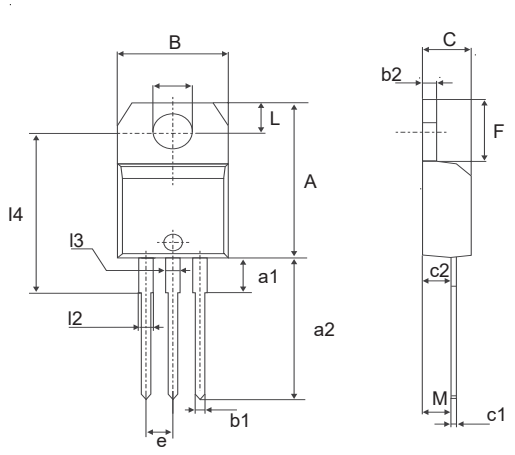
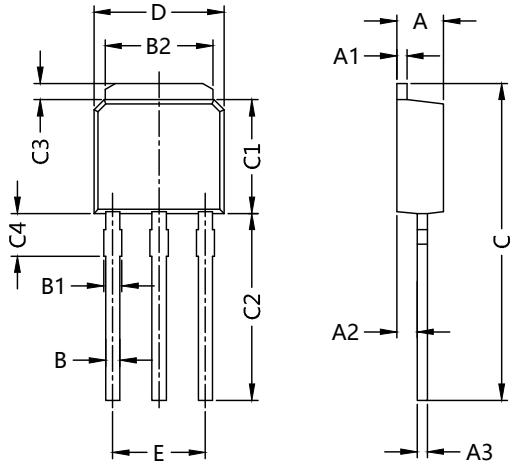
PACKAGE MECHANICAL DATA



TO-220B Non-Ins

REF.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.20		15.90	0.598		0.625
a1		3.75			0.147	
a2	13.00		14.00	0.511		0.551
B	10.00		10.40	0.393		0.409
b1	0.61		0.88	0.024		0.034
b2	1.23		1.32	0.048		0.051
C	4.40		4.60	0.173		0.181
c1	0.49		0.70	0.019		0.027
c2	2.40		2.72	0.094		0.107
e	2.40		2.70	0.094		0.106
F	6.20		6.60	0.244		0.259
ØI	3.75		3.85	0.147		0.151
l4	15.80	16.40	16.80	0.622	0.646	0.661
L	2.65		2.95	0.104		0.116
l2	1.14		1.70	0.044		0.066
l3	1.14		1.70	0.044		0.066
M		2.60			0.102	



TO-251

Dim.	Millimeter		Dim.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.20	2.40	C	14.50	15.80
A1	0.40	0.60	C1	5.85	6.20
A2	0.70	1.30	C2	7.85	8.60
A3	0.45	0.60	C3	0.60	1.20
B	0.50	0.80	C4	1.75	2.30
B1	0.65	1.00	D	6.30	6.70
B2	5.20	5.50	E	4.40	4.60

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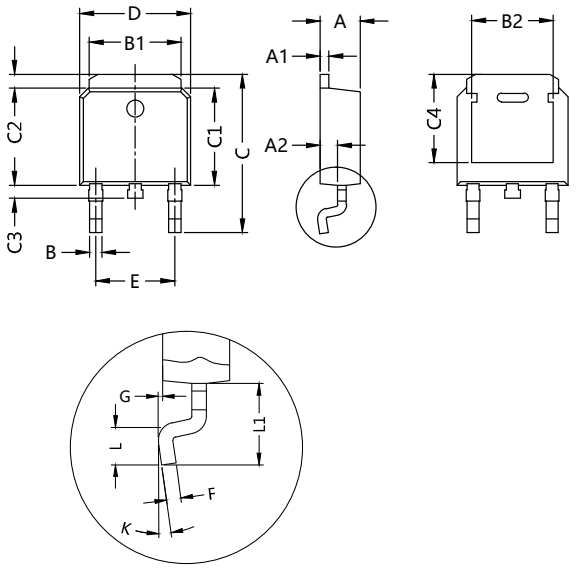
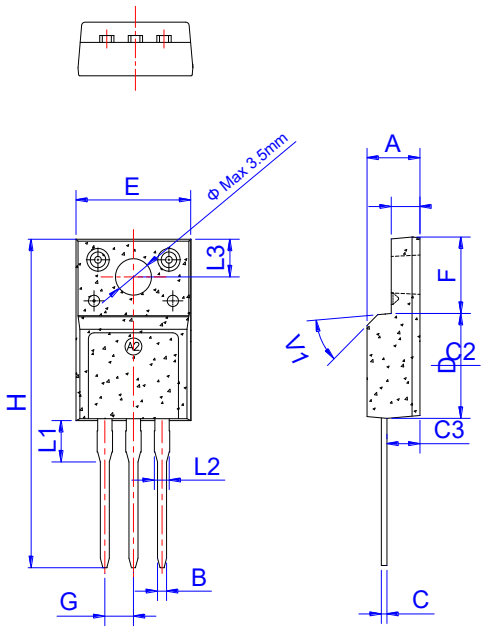
PACKAGE MECHANICAL DATA



TO-252

Dim.	Millimeter	
	Min.	Max.
A	2.20	2.40
A1	0.40	0.60
A2	0.90	1.25
B	0.60	1.00
B1	5.20	5.50
B2	4.80	5.20
C	9.50	10.20
C1	5.90	6.20
C2	1.00	1.30
C3	0.60	1.00
C4	5.25	5.95
D	6.40	6.70
E	4.40	4.60
F	0.45	0.60
G	0.03	0.23
K	0°	8°
L	1.00	/
L1	2.80	3.25



TO-220FP Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.409
F	6.40		6.80	0.252		0.268
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

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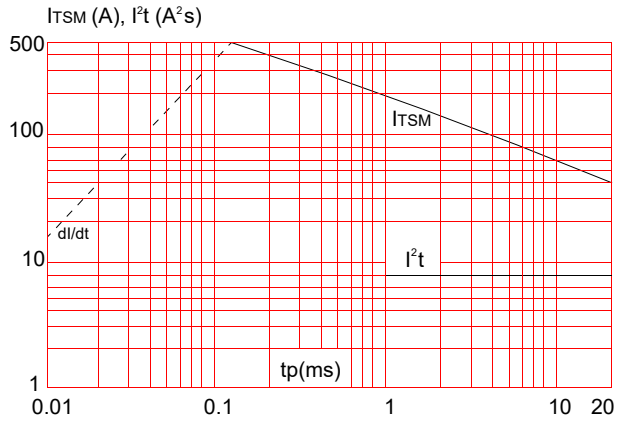

Fig.1: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms and corresponding value of I^2t (dI/dt < 50A/μs)

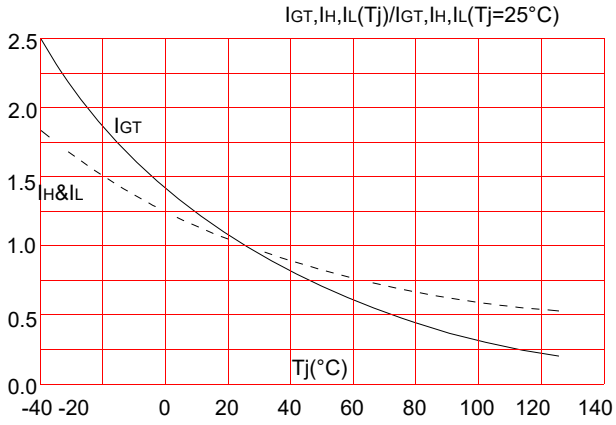

Fig.2: Relative variations of gate trigger current, holding current and latching current versus junction temperature

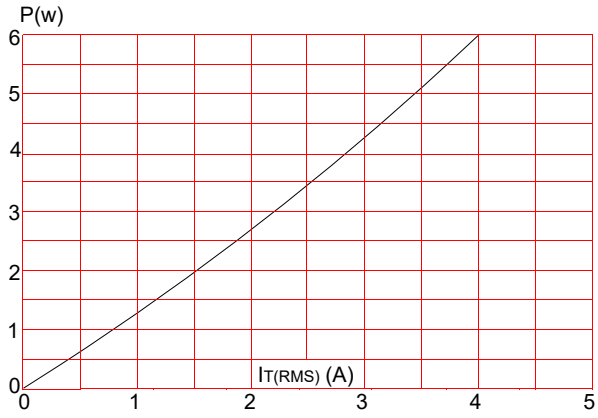

Fig.3: Maximum power dissipation versus RMS on-state current

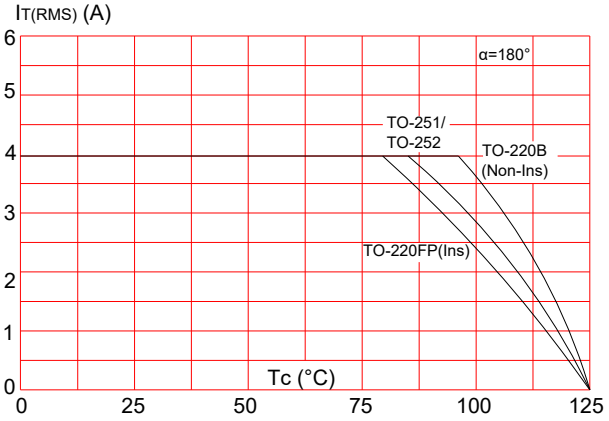

Fig.4: RMS on-state current versus case temperature

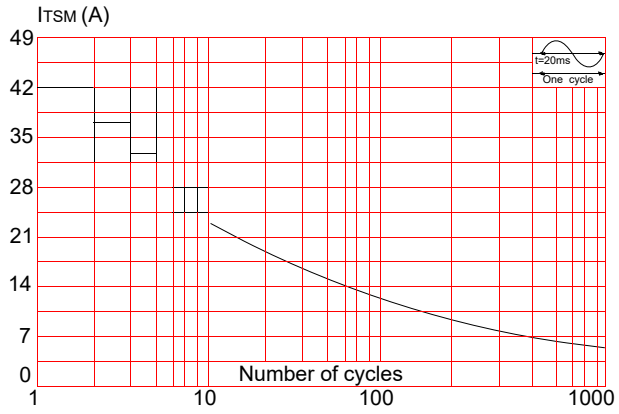

Fig.5: Surge peak on-state current versus number of cycles

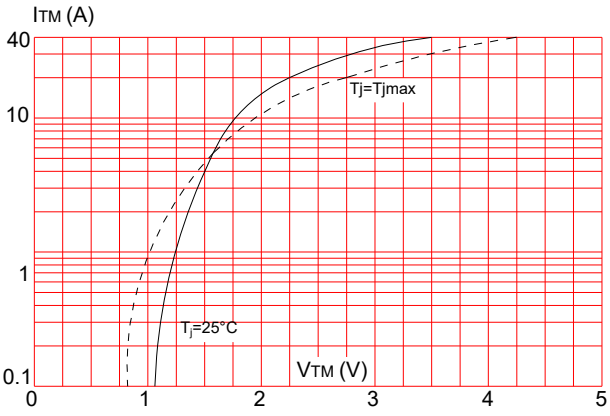

Fig.6: On-state characteristics (maximum values)

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