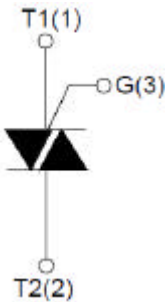
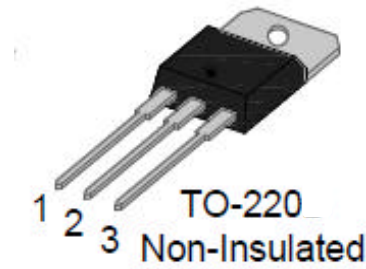


16A TRIACs

BTB16 - 600/800/1200



TO-220
Non Insulated
Plastic Package

BTB16 Series Triacs, with high ability to withstand the shock loading of large current, provide high dV/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 Quadrants products especially recommended for use on Inductive Load.

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Repetitive Peak Off-State Voltage (T _j =25°C)	V _{DRM}	600 / 800 / 1200	V
Repetitive Peak Reverse Voltage (T _j =25°C)	V _{RRM}	600 / 800 / 1200	V
Non Repetitive Surge Peak Off-State Voltage	V _{DSM}	V _{DRM} + 100	V
Non Repetitive Peak Reverse Voltage	V _{RSM}	V _{RRM} + 100	V
RMS On-State Current (T _c = 107°C)	I _{T(RMS)}	16	A
Non Repetitive Surge Peak On-State Current (Full Cycle, f = 50MHz)	I _{TSM}	160	A
I ² t Value For Fusing (tp=10ms)	I ² t	128	A ² s
Critical Rate of Rise of On-State Current (I _G = 2 X I _{GT})	di/dt	50	A/μs
Peak Gate Current	I _{GM}	4	A
Average Gate Power Dissipation	P _{G(AV)}	1	W
Peak Gate Power	P _{GM}	5	W
Storage Junction Temperature Range	T _{STG}	-40 to +150	°C
Operating Junction Temperature Range	T _J	-40 to +125	°C

THERMAL RESISTANCE

Maximum Thermal Resistance Junction to case	R _{th(j-c)}	1.2	°C/W
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ELECTRICAL CHARACTERISTICS (T_j = 25°C unless otherwise specified)

Quadrants I - II - III (V_{DRM} / V_{RRM} : 600/800V)

PARAMETER	TEST CONDITION	SYMBOL	QUADRA NT	VALUES				UNIT
				BTB16 - 600 /800				
				BW	CW	SW	TW	
Gate Trigger Current	V _D =12V, R _L =33Ω	I _{GT}	I - II - III	< 50	< 35	< 10	< 5	mA
Gate Trigger Voltage		V _{GT}	I - II - III	<1.3				V
Off-State Gate Voltage	V _D =V _{DRM} , T _j =125°C, R _L = 3.3KΩ	V _{GD}	I - II - III	>0.2				V
Latching Current	I _G =1.2 X I _{GT}	I _L	I - III	< 70	< 50	< 30	< 15	mA
			II	< 80	< 60	< 40	< 20	
Holding Current	I _T = 100mA	I _H		< 60	< 40	< 25	< 15	mA
Critical Rate of Rise of Off-State Voltage	V _D = 2/3 V _{DRM} , Gate Open, T _j =125°C	dV/dt		> 1000	> 500	> 200	> 100	V/μs

Quadrant IV (V_{DRM} / V_{RRM} : 600/800V)

PARAMETER	TEST CONDITION	SYMBOL	QUADRA NT	VALUES		UNIT
				BTB16 - 600 /800		
				B	C	
Gate Trigger Current	V _D =12V, R _L =33Ω	I _{GT}	I - II - III	< 50	< 25	mA
			IV	< 70	< 50	
Gate Trigger Voltage		V _{GT}	ALL	<1.5		V
Off-State Gate Voltage	V _D =V _{DRM} , T _j =125°C, R _L = 3.3KΩ	V _{GD}	ALL	>0.2		V
Latching Current	I _G =1.2 X I _{GT}	I _L	I - III - IV	< 70	< 50	mA
			II	< 100	< 80	
Holding Current	I _T = 100mA	I _H		< 60	< 40	mA
Critical Rate of Rise of Off-State Voltage	V _D = 2/3 V _{DRM} , Gate Open, T _j =125°C	dV/dt	dV/dt	> 500	> 200	V/μs

Quadrants I - II - III ($V_{DRM} / V_{RRM} : 1200V$)

PARAMETER	TEST CONDITION	SYMBOL	QUADRANT	VALUES	UNIT
				BTB16 - 1200	
Gate Trigger Current	$V_D=12V, R_L=33\Omega$	I_{GT}	I - II - III	< 50	mA
Gate Trigger Voltage		V_{GT}	I - II - III	<1.5	V
Off-State Gate Voltage	$V_D=V_{DRM}, T_J=125^\circ C, R_L = 3.3K\Omega$	V_{GD}	I - II - III	>0.2	V
Latching Current	$I_G=1.2 \times I_{GT}$	I_L	I - III	< 70	mA
			II	< 90	
Holding Current	$I_T = 100mA$	I_H		< 60	mA
Critical Rate of Rise of Off-State Voltage	$V_D = 2/3 V_{DRM}$, Gate Open, $T_J=125^\circ C$	dV/dt	dV/dt	> 1500	V/ μs

STATIC CHARACTERISTICS

PARAMETER	TEST CONDITION	SYMBOL		VALUE			UNIT
				BTB16			
				600	800	1200	
On-State Voltage	$I_{TM}=22.5A, t_p=380\mu s$	V_{TM}	$T_J=25^{\circ}C$	<1.5			V
Off-State Leakage Current	$V_D = V_{DRM},$ $V_R = V_{RRM}$	I_{DRM}	$T_J = 25^{\circ}C$	<5	<5	<10	μA
		I_{DRM}	$T_J = 125^{\circ}C$	<2	<2	<1	mA

CHARACTERISTICS CURVES

FIG.1 Maximum power dissipation versus RMS on-state current

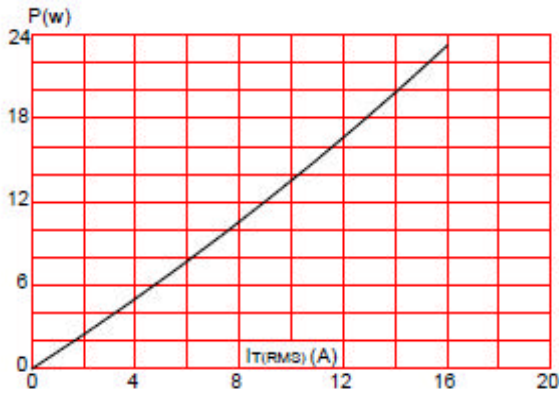


FIG.3: Surge peak on-state current versus number of cycles

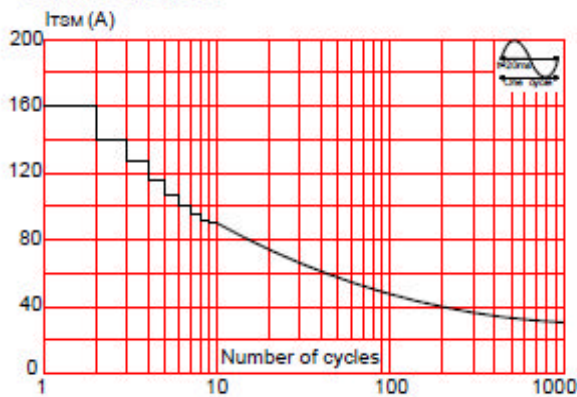


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

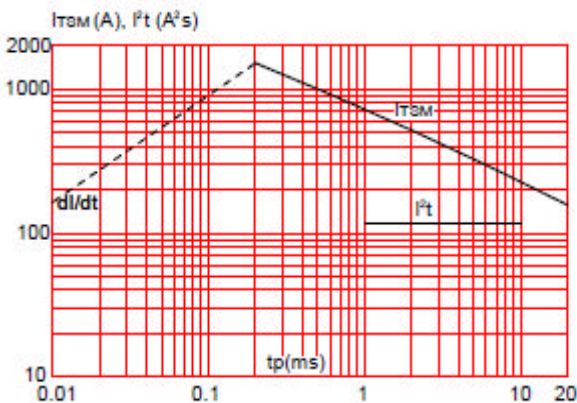


FIG.2: RMS on-state current versus case temperature

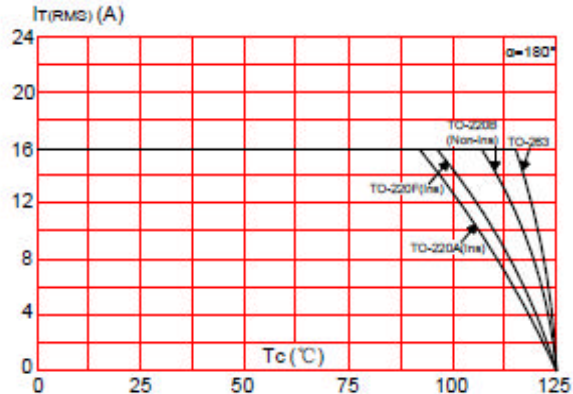


FIG.4: On-state characteristics (maximum values)

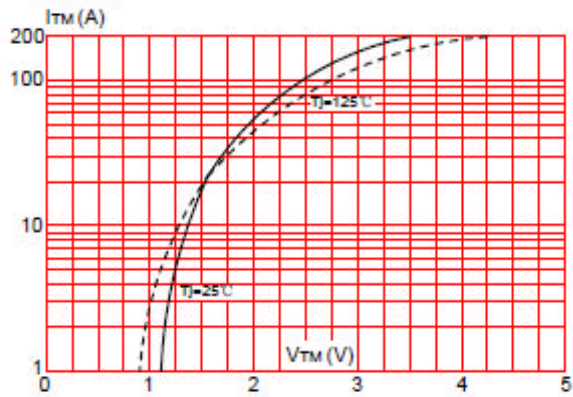
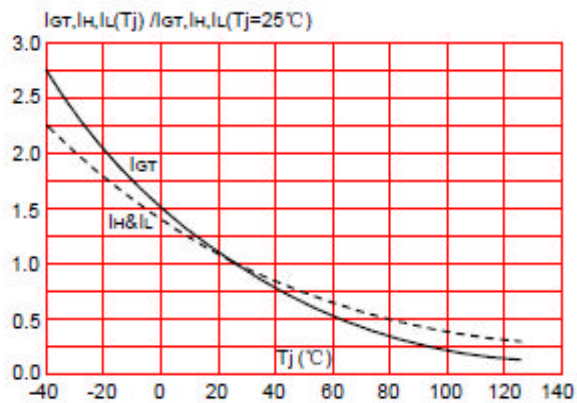
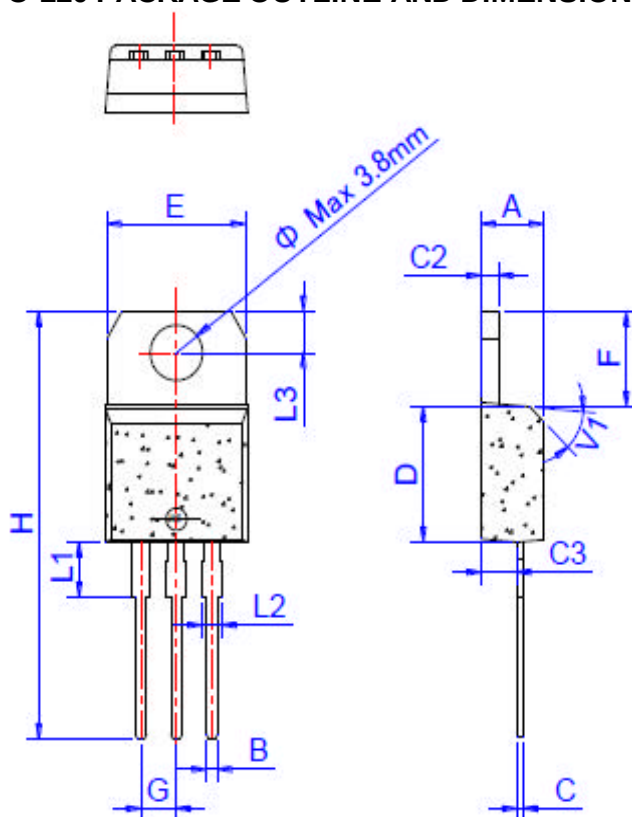


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



TO-220 PACKAGE OUTLINE AND DIMENSION



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	



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Customer Notes

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

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