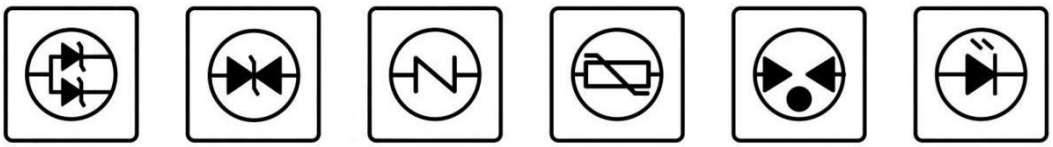
MSKSEMI 美森科
SEMICONDUCTOR



BTA16-600xRG-MS

Product specification

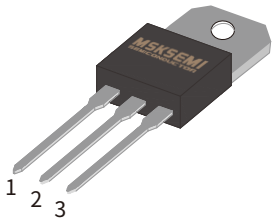
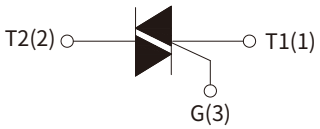
FEATURES

- High current 16 A RMS current Triac
- Low thermal resistance
- High commutation or very high commutation capability

APPLICATIONS

- General purpose motor control circuits
- Phase control operations in light dimmers and motor speed controllers
- Home appliances

Reference News

TO-220AB	Schematic Symbol	MARKING
		MSKSEMI BTA16-600 MS***

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Repetitive peak off-state voltage (T_j=25℃)		V_{DRM}	600	V
Repetitive peak reverse voltage (T_j=25℃)		V_{RRM}	600	V
RMS on-state current (T_C=87℃)		$I_{T(RMS)}$	16	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	140	
I²t value for fusing (tp=10ms)		I²t	98	A^2S
Critical rate of rise of on-state current (I_G=2*I_{GT})	I - II-III	dI/dt	50	A/μs
	IV		10	
Peak gate current		I_{GM}	2	A
Average gate power dissipation		$P_{G(AV)}$	0.5	W
Peak gate power		P_{GM}	5	W
Operating junction temperature range		T_j	-40~+125	℃
Storage junction temperature range		T_{STG}	-40~+150	

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value				Unit
			D	E	F	B	
I_{GT}	V_D=12V,R_L=33Ω	I - II-III	≤5	≤10	≤25	≤50	mA
		Ⅳ	≤10	≤25	≤70	≤70	
V_{GT}		ALL	≤1.3				V
V_{GD}	V_D=V_{DRM}, R_L=3.3KΩ,T_j=125℃	ALL	≥0.2				V
I_H	I_T=100mA		≤10	≤25	≤40	≤60	mA
I_L	I_G=1.2I_{GT}	I - III- Ⅳ	≤15	≤30	≤50	≤80	
		II	≤20	≤40	≤100	≤120	
dV_D/dt	V_D=67%V_{DRM},T_j=125℃		≥20	≥50	≥100	≥500	V/μs
V_{TM}	I_{TM}=20A,tp=380μs		≤1.6				V
I_{DRM}	V_D=V_{DRM}, V_R=V_{RRM}	T_j=25℃	≤5				uA
I_{RRM}		T_j=125℃	≤1				mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(AC)	2.1	℃/W

PARAMETER CHARACTERISTIC CURVE

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

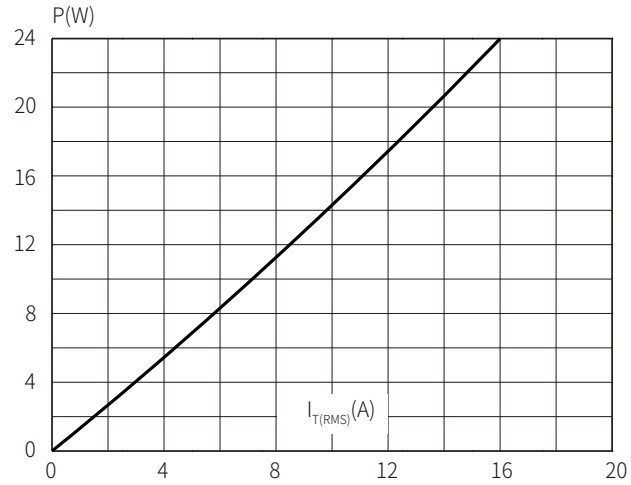


FIG.2: RMS on-state current versus case temperature

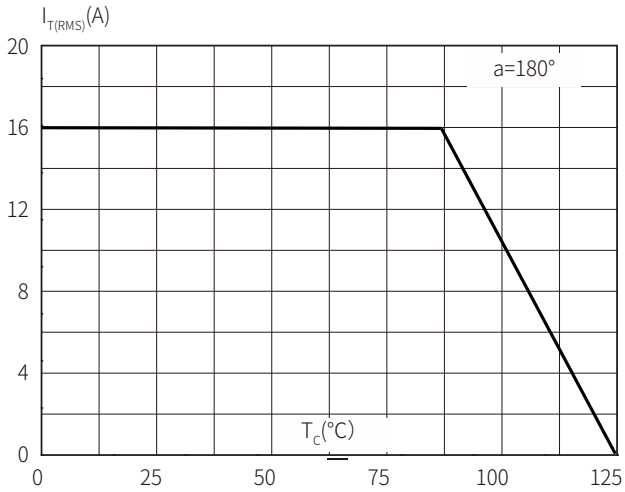


FIG.3: Surge peak on-state current versusnumber of cycles

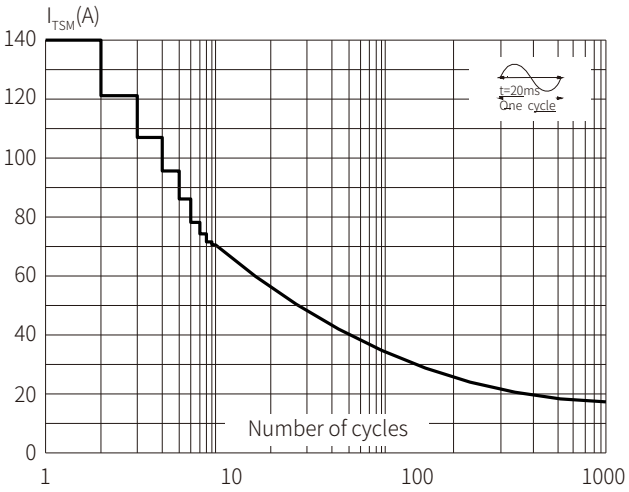


FIG.4 On-state characteristics (maximum values)

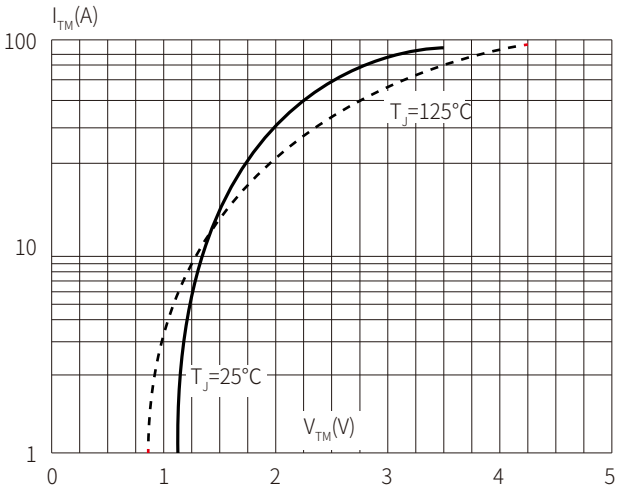


FIG.5: Non-repetitive surge peak on-state currentfor a sinusoidal pulse with width tp<20ms andcorresponding value of I²t (Ⅰ - Ⅱ -Ⅲ:dI/dt<50A/μs; Ⅳ:dI/dt<10A/μs)

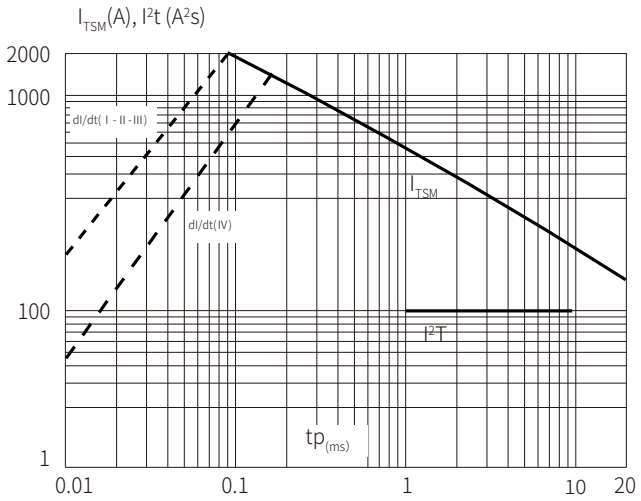


FIG.6 Relative variations of gate trigger current versus junction temperature

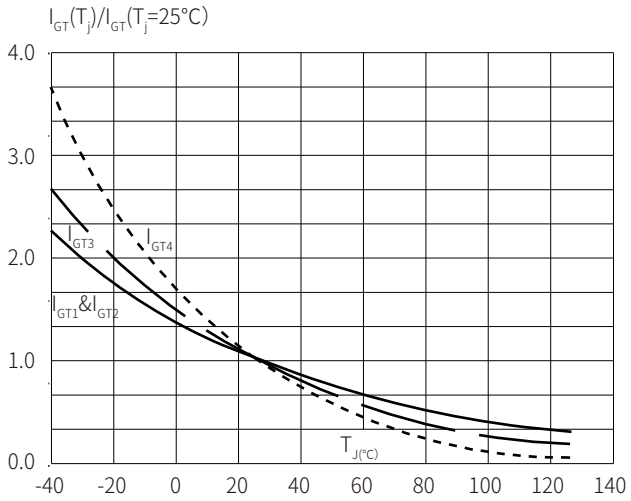


FIG.7 Relative variations of holding current versus junction temperature

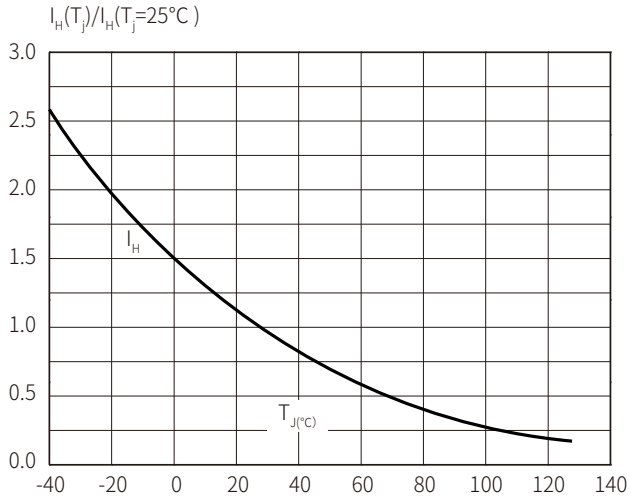
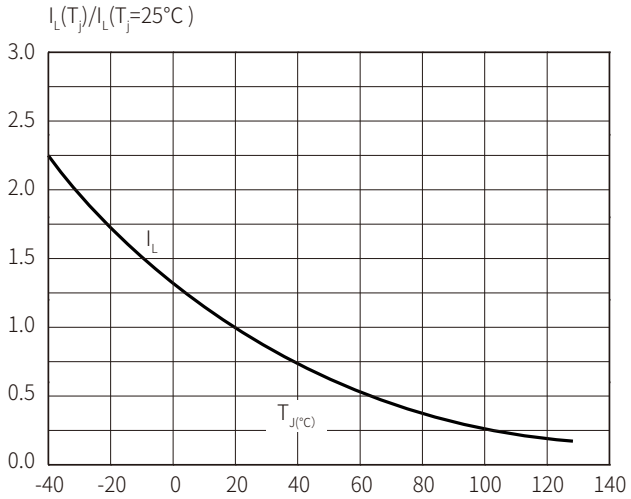
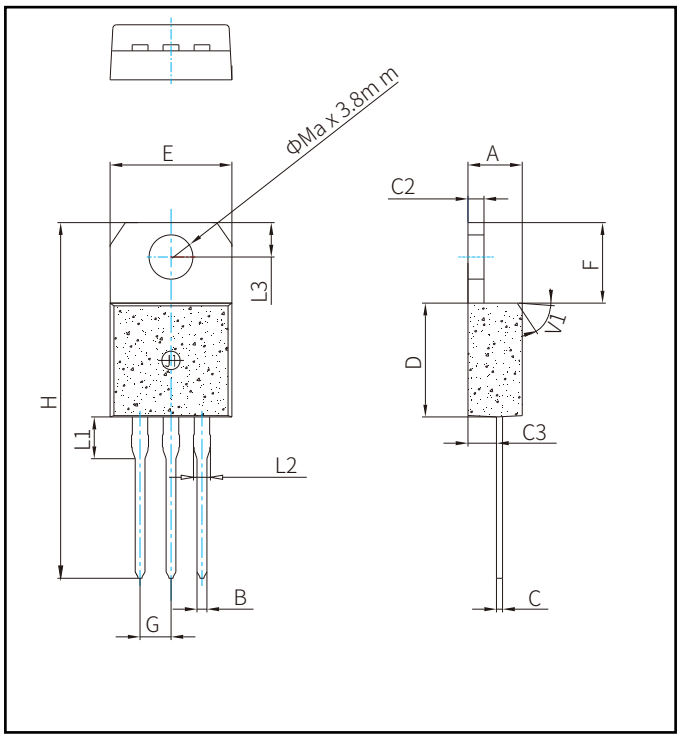


FIG.8 Relative variations of atching current versus junction temperature



TO-220AB PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.30		4.70	0.169		0.185
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	0.222		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°	

Order information

P/N	PKG	QTY
BTA16-600DRG-MS	TO-220AB	1000PCS
BTA16-600ERG-MS	TO-220AB	1000PCS
BTA16-600FRG-MS	TO-220AB	1000PCS
BTA16-600BRG-MS	TO-220AB	1000PCS

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