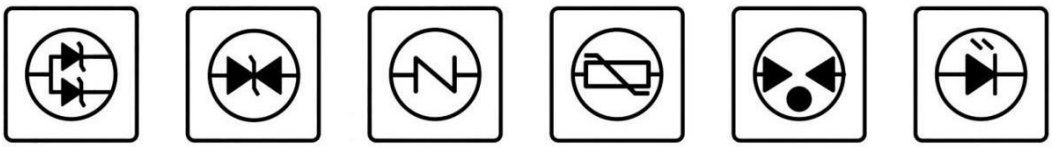
MSKSEMI 美森科
SEMICONDUCTOR



BTA41-600xRG-MS

Product specification

FEATURES

- High current 40 A RMS current Triac
- Low thermal resistance
- High commutation or very high commutation capability

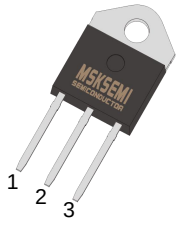
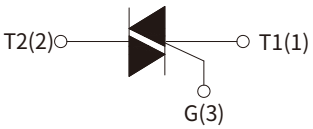
APPLICATIONS

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

APPROVALS

- RoHS：Compliance with
- HF：Compliance with

Reference News

TOP-3	Schematic Symbol	BTA41-600BRG-MS	BTA41-600CRG-MS
			

THE MAIN PARAMETERS

Symbol	Parameter	Value	Unit
$I_{T(RMS)}$	RMS on-state current	40	A
V_{DRM}	Off-state repetitive peak voltage	600	V
V_{TM}	On-state voltage	1.5	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage (T_j=25℃)	V_{DRM}	600	V
Repetitive peak reverse voltage (Tj=25℃)	V_{RRM}	600	V
RMS on-state current (T_C=90℃)	$I_{T(RMS)}$	40	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	400	
I²t value for fusing (tp=10ms)	I²t	880	A²S
Critical rate of rise of on-state current (I_G=2*I_{GT})	dI/dt	50	A/μs
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Storage junction temperature range	T_{STG}	-40~+150	℃
Operating junction temperature range	T_j	-40~+125	

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
			B	C	
I_{GT}	V_D=12V,R_L=33Ω	Ⅰ- Ⅱ-Ⅲ	≤50	≤25	mA
		Ⅳ	≤70	≤50	
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		≤80	≤30	mA
I_L	I_G=1.2I_{GT}	Ⅰ- Ⅲ- Ⅳ	≤90	≤60	
		Ⅱ	≤100	≤80	
dV_D/dt	V_D=67%V_{DRM},T_j=125℃		≥1000	≥500	V/μs
V_{TM}	I_{TM}=60A,tp=380μs		≤1.5		V
I_{DRM}	V_D=V_{DRM} , V_R=V_{RRM}	T_j=25℃	≤10		uA
I_{RRM}		T_j=125℃	≤5		mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(AC)	1.1	℃/W

PARAMETER CHARACTERISTIC CURVE

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

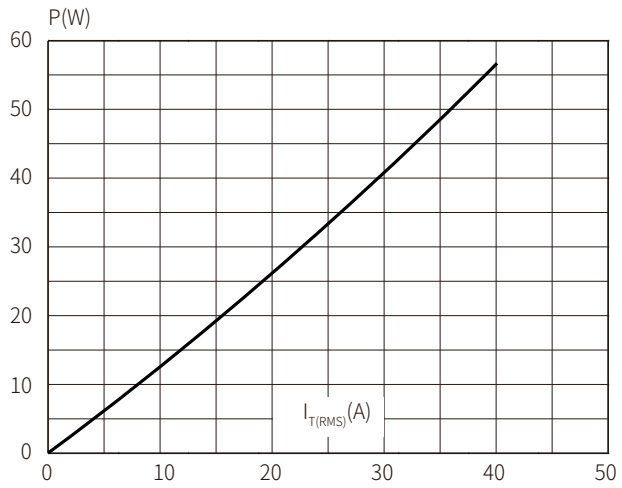


FIG.2: RMS on-state current versus case temperature

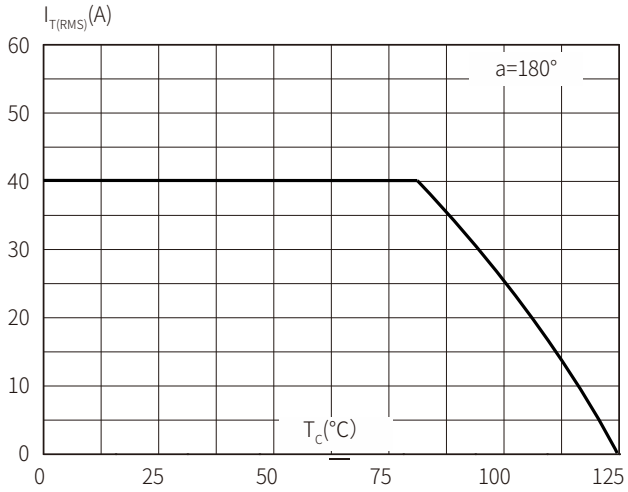


FIG.3: Surge peak on-state current versusnumber of cycles

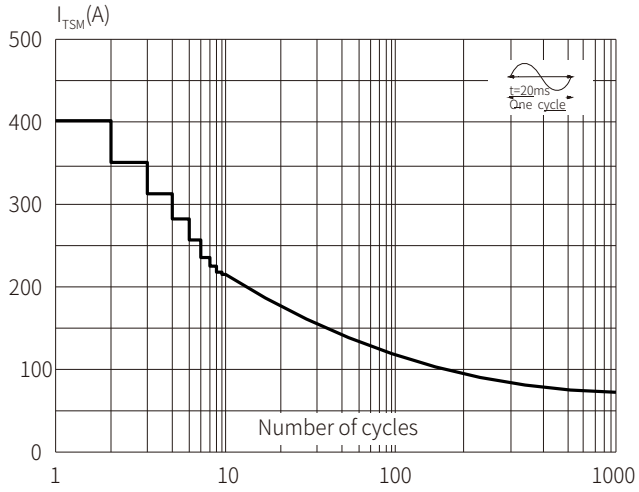


FIG.4 On-state characteristics (maximum values)

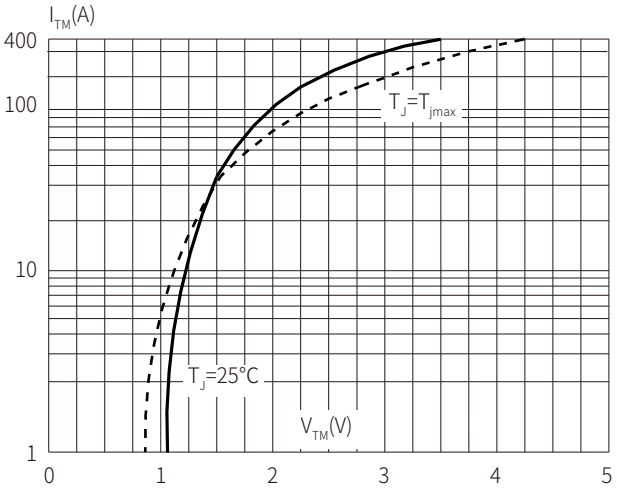


FIG.5: Non-repetitive surge peak on-state currentfor a sinusoidal pulse with width tp<20ms and corresponding value of I ²t (dI/dt < 50A/μs)

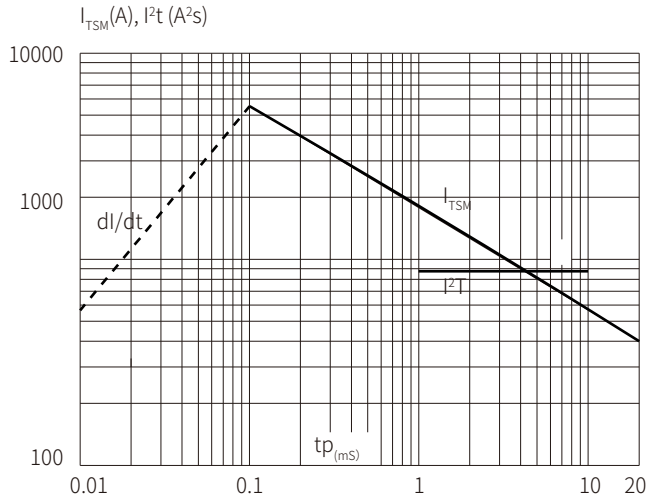


FIG.6 Relative variations of gate trigger current versus junction temperature

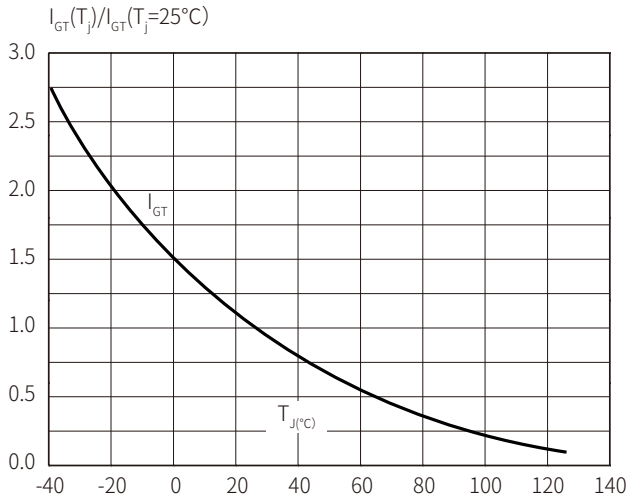


FIG.7 Relative variations of holding current versus junction temperature

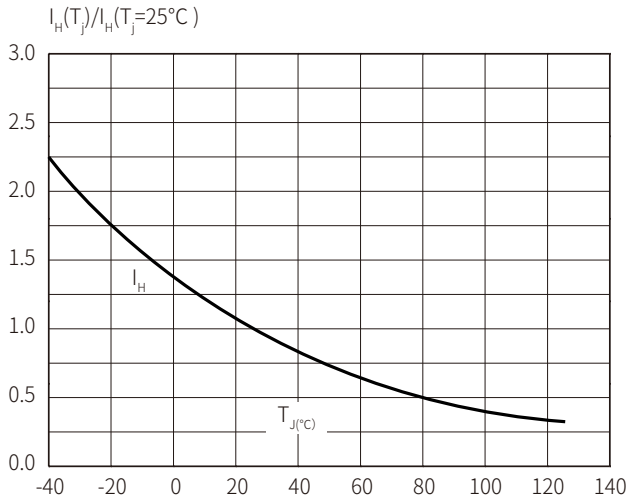
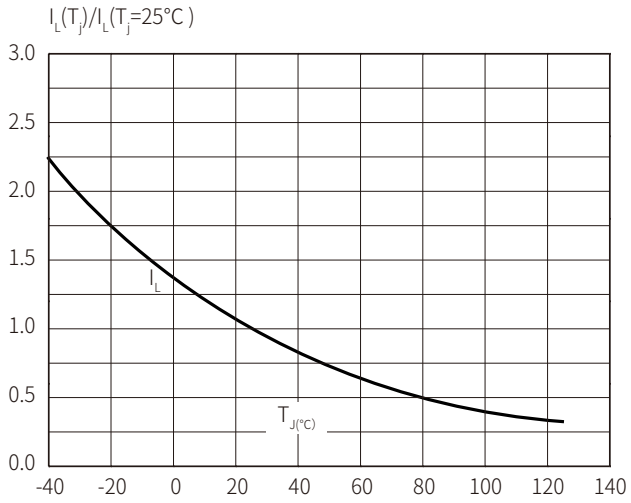
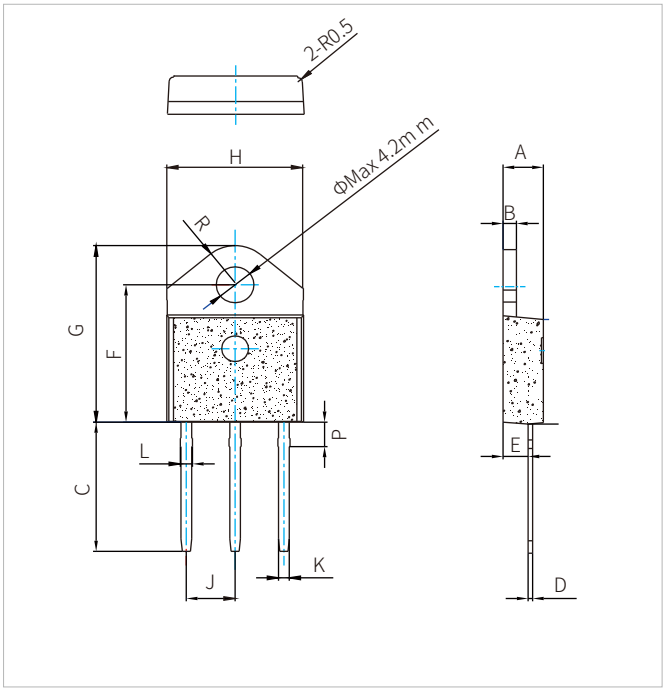


FIG.8 Relative variations of atching current versus junction temperature



TOP-3 PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.30		4.70	0.169		0.185
B	1.40		1.60	0.056		0.063
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.70		16.60	0.618		0.654
G	20.40		21.10	0.803		0.831
H	15.00		15.60	0.591		0.614
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.20		1.50	0.047		0.059
P	2.80		3.80	0.110		0.150
R		4.35			0.171	

Order information

P/N	PKG	QTY
BTA41-600BRG-MS	TOP-3	480PCS
BTA41-600CRG-MS	TOP-3	480PCS

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