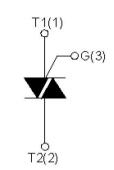


40A TRIACS

1



BTA41-600/800/1200/1600 TOP3 Plastic Package

BTA41 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
Storage junction temperature range	T _{stg}	-40 to 150	°C
Operating junction temperature range	T _j	-40 to 125	°C
Repetitive peak off-state voltage (T _j =25°C)	V _{DRM}	600/800/1200/1600	V
Repetitive peak reverse voltage (T _j =25°C)	V _{RRM}	600/800/1200/1600	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 =80°C)	I _{T(RMS)}	40	А
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I _{TSM}	400	А
I ² t value for fusing (t _p =10ms)	l ² t	880	A ² s
Critical rate of rise of on-state current $(I_G = 2 \times I_{GT})$	dl/dt	50	A/µs
Peak gate current	I _{GM}	4	А
Average gate power dissipation	P _{G(AV)}	1	W
Peak gate power	P _{GM}	10	W



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

3 Quadrants						
PARAMETER	TEST CONDITIONS	SYMBOL	QUADRANT		VALUES	UNITS
Gate Trigger Current		I _{GT}	I - II - III	MAX	50	mA
Gate Trigger Voltage	VD =12V RL =33Ω	V _{GT}	I - II - III	MAX	1.3	V
Off-State Gate Voltage	V _D =V _{DRM} T _j =125°C R _L =3.3KΩ	V_{GD}	I - II - III	MIN	0.2	V
Latabian Current	1 -1 21		I - III	MAX	80	mA
Latching Current	$I_{G} = 1.2I_{GT}$	Ι _L	II	IVIAA	100	ША
Holding Current	Ι _T =100mA	I _H		MAX	60	mA
Critical Rate of Rise of Off-State Voltage	V _D =2/3V _{DRM} Gate Open T _j =125°C	dV/dt		MIN	1000	V/µs
	Without snubber T _j =125°C	(dV/dt)c		MIN	20	V/µs

4 Quadrants

PARAMETER	TEST CONDITIONS	SYMBOL	QUADRANT		VALUES	UNITS
Gate Trigger Current		I _{GT}	I - II - III IV	MAX	50 70	mA
Gate Trigger Voltage	$V_{\rm D}$ =12V R _L =33Ω	V _{GT}	ALL	MAX	1.5	V
Off-State Gate Voltage	V _D =V _{DRM} T _j =125°C R _L =3.3KΩ	V_{GD}	ALL	MIN	0.2	V
Latching Current	I _G =1.2I _{GT}	١ _L	I - III - IV II	MAX	90 100	mA
Holding Current	Ι _T =100mA	I _H		MAX	80	mA
Critical Rate of Rise of Off-State Voltage	V _D =2/3V _{DRM} Gate Open T _j =125°C	dV/dt		MIN	500	V/µs
	Without snubber T _j =125°C	(dV/dt)c		MIN	30	V/µs

STATIC CHARACTERISTICS

PARAMETER	TEST CONDITIONS		SYMBOL	VALUE (MAX)	UNITS
On-State Voltage	I _™ =60A t _p =380µs	T _j =25°C	V _{TM}	1.55	V
Off-State Leakage		Tj=25°C	I _{DRM}	10	μA
$V_{\rm D} = V_{\rm DRM} V_{\rm R} = V_{\rm RRM}$	T _j =125°C	I _{RRM}	5	mA	

THERMAL RESISTANCES

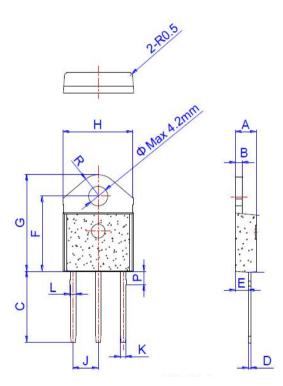
PARAMETER	SYMBOL	VALUE (MAX)	UNITS
junction to case(AC)	R _{th(j-c)}	0.9	°C/W





ORDERING INFORMATION BTA 41 - 600 BW (a) = 600: VDRM/VRRM \geq 600 (b) = BW: $I_{GT3} \leq$ 50mA = 800: VDRM/VRRM \geq 800 = B: $I_{GT1-3} \leq$ 50mA = 1200: VDRM/VRRM \geq 1200 = 1600: VDRM/VRRM \geq 1600

TOP3 PACKAGE OUTLINE AND DIMENSION



			Dime	ensions			
Ref.		Millimeters			Inches		
	Min.	Тур.	Max.	Min.	Тур.	Max.	
A	4.40		4.60	0.173	2	0.181	
В	1.45		1.55	0.057	9	0.061	
С	14.35		15.60	0.565	9) 9)	0.614	
D	0.50	2	0.70	0.020	9) 	0.028	
Е	2.70		2.90	0.106	2)	0.114	
F	15.80		16.50	0.622		0.650	
G	20.40		21.10	0.803		0.831	
Н	15.10		15.50	0.594		0.610	
J	5.40		5.65	0.213		0.222	
K	1.10		1.40	0.043		0.055	
L	1.35		1.50	0.053		0.059	
Ρ	2.80		3.00	0.110		0.118	
R		4.35			0.171		

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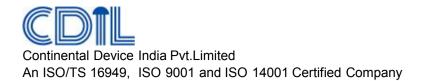
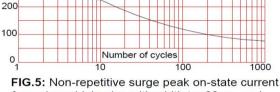






FIG.1 Maximum power dissipation versus RMS on-state current P(w) 60 50 40 30 20 10 OL IT(RMS)(A) 20 30 40 50 10 FIG.3: Surge peak on-state current versus number of cycles Iтsм (А) 400 300



for a sinusoidal pulse with width tp<20ms, and corresponging value of I²t (dI/dt < 50A/µs) ITSM (A), I²t (A²s)

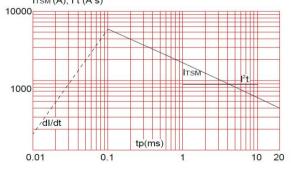
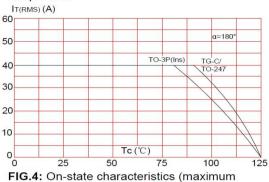


FIG.2: RMS on-state current versus case temperature



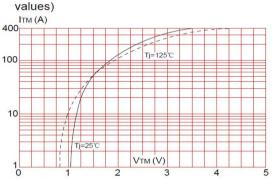
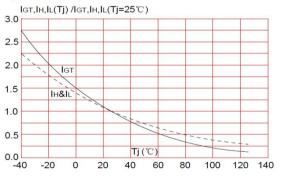


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature







Customer Notes

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