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C3 Semiconductor, LLC

POWER SEMICONDUCTORS

Applications

- Phase Control
- Static Switching
- Light Dimming
- Motor Speed Control
- Kitchen Equipment
- Power Tools
- Solenoid Valve Controls:
 - Dishwashers
 - Washing Machines

- > *Now New rating of 1200v*
- > *Suitable for General Purpose AC Switching*
- > *Alternistor/No Snubber Versions for Inductive Loads*
- > *Logic Level Available for use with Microcontrollers and Low Level Devices*
- > *IGT Range 35-50 mA (Q1)*
- > *V_{DRM}/V_{RMM} 400, 600, 800, 1000, 1200V*

CTA/CTB26

25Amp - 400/600/800/1000/1200V - TRIAC

Absolute Maximum Ratings

	CONDITIONS	SYMBOL	RATING
RMS On-State Current (full sine wave)	T _c = 90°C T _c = 75°C	TO-218 TO-218 Iso	I _{T(RMS)} 25A
Non Repetitive Surge Peak On-State Current (Full Cycle, T _j Initial = 25°C)	F = 50 Hz F = 60 Hz	I _{TSM}	250A 260A
I ² t Value for fusing	t _p = 10 ms	I ² t	340A ² s
Critical rate of rise of on-state current I _G = 2 x I _{GT} , t _r < 100 ns, T _j = 125°C		di/dt	100A/μs
Peak Gate Current @ T _j = 125°C	t _p = 20 μs	I _{GM}	4A
Average Gate Power Dissipation @ T _j = 125°C		P _{G(AV)}	1W
Storage Temperature Range		T _{stg}	-40 to +150°C
Operating Junction Temperature Range		T _j	-40 to +125°C
Isolation Voltage (CTA Series only)		V _{ISO}	2500 V _{RMS}

Electrical Characteristics

ALTERNISTOR/NO SNUBBER AND LOGIC LEVEL (3 Quadrants)		CW	BW
I _{GT} MAX @ V _D = 12 V, R _L = 3Ω NOTE 1	QI-II-III	35mA	50mA
V _{GT} MAX @ V _D = 12 V, R _L = 3Ω	QI-II-III	1.3V	1.3V
V _{GD} MIN @ V _D = V _{DRM} , R _L = 3.3kΩ T _j = 125°C	QI-II-III	0.2V	0.2V
I _H MAX @ I _T = 500 mA NOTE 2		50mA	75mA
I _L MAX @ I _G = 1.2 I _{GT}	QI-III	50mA	70mA
I _L MAX @ I _G = 1.2 I _{GT}	Q-II	80mA	100mA
dv/dt MIN @ V _b = 67%V _{DRM} (gate open) NOTE 2 T _j = 125°C		500V/μs	1000V/μs
(di/dt) _c MIN without Snubber NOTE 2 T _j = 125°C		13A/ms	22A/ms
STANDARD (4 Quadrants)			B
I _{GT} MAX @ V _D = 12 V, R _L = 3Ω NOTE 1	QI-II-III		50mA
I _{GT} MAX @ V _D = 12 V, R _L = 3Ω NOTE 1	QIV		100mA
V _{GT} MAX @ V _D = 12 V, R _L = 3Ω	Q-All		1.3V
V _{GD} MIN @ V _D = V _{DRM} , R _L = 3.3kΩ T _j = 125°C	Q-All		0.2V
I _H MAX @ I _T = 500 mA NOTE 2			80mA
I _L MAX @ I _G = 1.2 I _{GT}	QI-III-IV		70mA
I _L MAX @ I _G = 1.2 I _{GT}	Q-II		160mA
dv/dt MIN @ V _b = 67%V _{DRM} (gate open) NOTE 2 T _j = 125°C			500V/μs
(dv/dt) _c MIN @ (di/dt) _c = 13.3 A/ms NOTE 2 T _j = 125°C			10V/μs



ISO9001 Certified

GENERAL NOTES

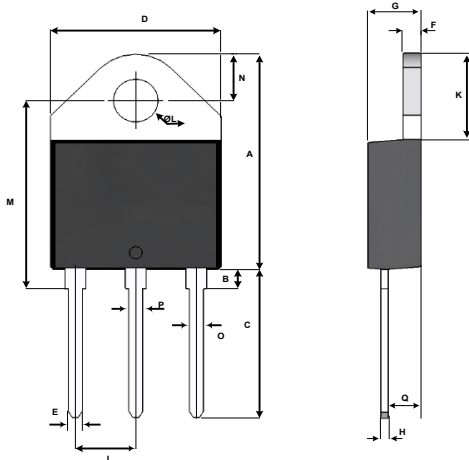
1. Minimum IGT is guaranteed at 5% of IGT max.
2. For both polarities of A2 referenced to A1
3. All parameters at 25 degrees C unless otherwise specified.

Static Characteristics

V_T MAX @ $I_{TM} = 35$ A, $t_p = 380\mu s$ NOTE 2	$T_j = 25^\circ\text{C}$	1.55V
V_{TO} MAX @ Threshold Voltage NOTE 2	$T_j = 125^\circ\text{C}$	0.85V
R_d MAX @ Dynamic Resistance NOTE 2	$T_j = 125^\circ\text{C}$	16rΩ
I_{DRM} MAX @ $V_{DRM} = V_{RRM}$	$T_j = 25^\circ\text{C}$	5μA
I_{RRM} MAX @ $V_{DRM} = V_{RRM}$	$T_j = 125^\circ\text{C}$	3mA

Thermal Resistances

	SYMBOL	RATING
Junction to Case (AC)	TO-218 Rth(j-c)	0.8°C/W
Junction to Case (AC)	TO-218 Isolated Rth(j-c)	1.1°C/W
Junction to Ambient	TO-218 Rth(j-a)	50°C/W
Junction to Ambient	TO-218 Isolated Rth(j-a)	50°C/W



Dimensions

REF.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	20.4		21.1	0.8		0.831
B		3.23			0.127	
C	14.35		15.60			0.565
D	15.1		15.5	0.594		0.610
E	1.20		1.40	0.047		0.055
F	1.45		1.55	0.057		0.061
G	4.4		4.6	0.173		0.181
H	0.5		0.7	0.020		0.028
J	5.4		5.65	0.213		0.222
K	8.0		8.25	0.315		0.325
L	4.08		4.17	0.161		0.164
M	15.8		16.5	0.622		0.650
N	4.6		4.8	0.181		0.189
O	1.20		1.40	0.047		0.055
P	1.20		1.40	0.047		0.055
Q	2.7		2.9	0.106		0.114

Part Number Selection

Part Number	Voltage [Vpk]	I_T [mA]	Type	Package
CTA/CTB26-xxxB	400, 600, 800, 1000	50mA	Standard	TO-218
CTA/CTB26-xxxBW	400, 600, 800, 1000	50mA	Alternistor/No Snubber	TO-218
CTA/CTB26-xxxCW	400, 600, 800, 1000	35mA	Alternistor/No Snubber	TO-218

Part Number Designation

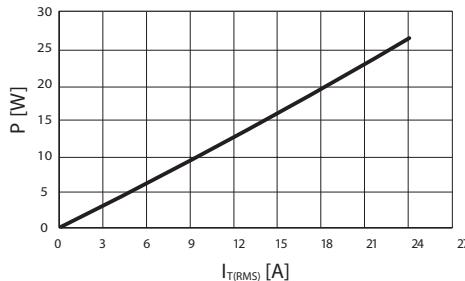
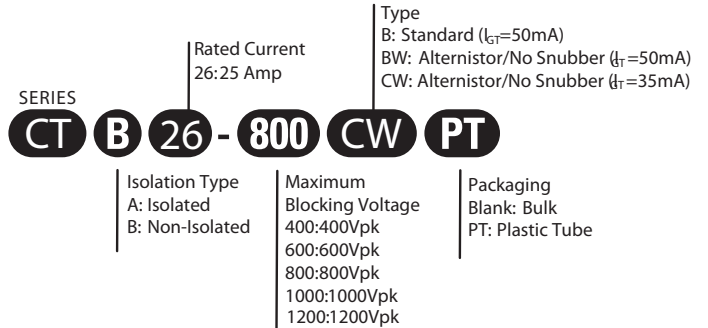


Fig. 1: Power dissipation versus RMS on-state current (full cycle).

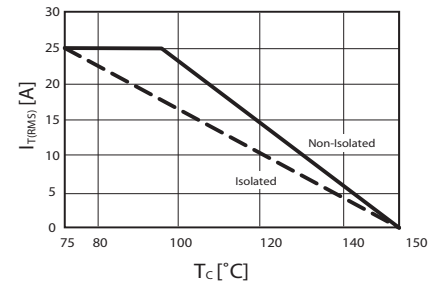


Fig. 2: RMS on-state current versus case temperature (full cycle)

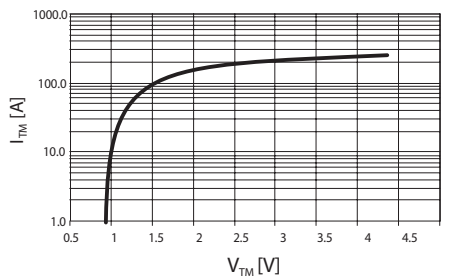


Fig. 3: On-state current versus on-state voltage (instantaneous values)

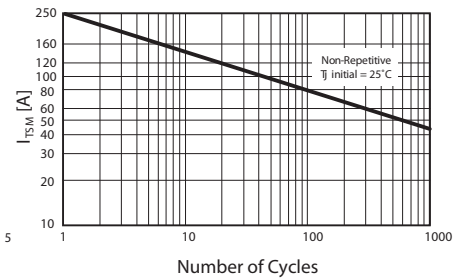


Fig. 4: Non-repetitive surge peak on-state current versus number of cycles.

ISO9001 Certified

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Approvals

UL - E72445

For recommended applications and more information contact:

USA : Sales Support (888) 882-8689

C3 Semiconductors, LLC. 501 West Broadway Street, Suite 800, San Diego CA 92101

Email : sales@c3semi.com WEB SITE : <http://www.C3semi.com>