



Applications

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

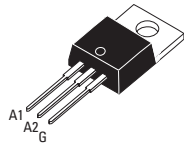
- > **Suitable for General Purpose AC Switching**
- > **Alternistor/No Snubber Versions for Inductive Loads**
- > **Logic Level Available for use with Microcontrollers and Low Level Devices**
- > **IGT Range 10-50 mA (Q1)**
- > **V_{DRM}/V_{RMM} 400, 600, 800, 1000V**

CTA/CTB16

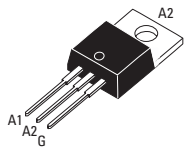
16Amp - 400/600/800/1000V - **TRIAC**

Absolute Maximum Ratings

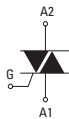
	CONDITIONS	SYMBOL	RATING
RMS On-State Current (full sine wave)	T _c = 100°C T _c = 85°C	T0-220AB T0-220AB Iso I _{T(RMS)}	16A
Non Repetitive Surge Peak On-State Current (Full Cycle, T _j Initial = 25°C)	F = 50 Hz F = 60 Hz	I _{TSM}	160A 168A
I ² t Value for fusing	tp = 10 ms	I ² t	144A ² s
Critical rate of rise of on-state current I _G = 2 x I _{GT} , tr < 100ns, T _j = 125°C		di/dt	100A/μs
Peak Gate Current @ T _j = 125°C	tp = 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}



T0-220AB Isolated (CTA16)



T0-220AB Non-Isolated (CTB16)



Electrical Characteristics

ALTERNISTOR/NO SNUBBER AND LOGIC LEVEL (3 Quadrants)

		SW	CW	BW
I _{GT} MAX @ V _D = 12 V, R _L = 30Ω NOTE 1	QI-II-III	10mA	35mA	50mA
V _{GT} MAX @ V _D = 12 V, R _L = 30Ω	QI-II-III	1.3V	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	0.2V
I _H MAX @ I _T = 500 mA NOTE 2		15mA	35mA	50mA
I _L MAX @ I _G = 1.2 I _{GT}	QI-III	25mA	50mA	70mA
I _L MAX @ I _G = 1.2 I _{GT}	Q-II	30mA	60mA	80mA
dv/dt MIN @ V _D = 67%V _{DRM} (gate open) NOTE 2 T _j = 125°C		40V/μs	500V/μs	1000V/μs
(dv/dt) _c MIN @ (dv/dt) _c = 0.1 V/ms NOTE 2 T _j = 125°C		8.5A/ms		
(dv/dt) _c MIN @ (dv/dt) _c = 10 V/ms NOTE 2 T _j = 125°C		3.0A/ms		
(di/dt) _c MIN without Snubber NOTE 2 T _j = 125°C			8.5A/ms	14A/ms

STANDARD (4 Quadrants)

		C	B
I _{GT} MAX @ V _D = 12 V, R _L = 30Ω NOTE 1	QI-II-III	25mA	50mA
I _{GT} MAX @ V _D = 12 V, R _L = 30Ω NOTE 1	QIV	50mA	100mA
V _{GT} MAX @ V _D = 12 V, R _L = 30Ω	Q-AII	1.3V	
V _{GD} MIN @ V _D = V _{DRM} , R _L = 3.3kΩ T _j = 125°C	Q-AII	0.2V	
I _H MAX @ I _T = 500 mA NOTE 2		25mA	50mA
I _L MAX @ I _G = 1.2 I _{GT}	QI-III-IV	40mA	50mA
I _L MAX @ I _G = 1.2 I _{GT}	Q-II	80mA	100mA
dv/dt MIN @ V _D = 67%V _{DRM} (gate open) NOTE 2 T _j = 125°C		200V/μs	400V/μs
(dv/dt) _c MIN @ (di/dt) _c = 7.0 A/ms NOTE 2 T _j = 125°C		5V/μs	10V/μs

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.

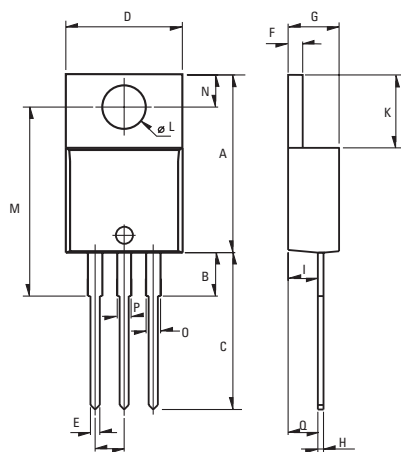
ISO9001 Certified

Static Characteristics

V _T MAX @ I _{TM} = 22.5 A, t _p = 380μs ^{NOTE 2}	T _J = 25°C	1.55V
V _{to} MAX @ Threshold Voltage ^{NOTE 2}	T _J = 125°C	0.85V
R _d MAX @ Dynamic Resistance ^{NOTE 2}	T _J = 125°C	25mΩ
I _{DRM} MAX @ V _{DRM} = V _{RRM}	T _J = 25°C	5μA
I _{RRM} MAX @ V _{DRM} = V _{RRM}	T _J = 125°C	2mA

Thermal Resistances

<i>Thermal Resistances</i>		SYMBOL	RATING
Junction to Case (AC)	TO-220AB	Rth(j-c)	1.2°C/W
Junction to Case (AC)	TO-220AB Isolated	Rth(j-c)	2.1°C/W
Junction to Ambient	TO-220AB	Rth(j-a)	60°C/W
Junction to Ambient	TO-220AB Isolated	Rth(j-a)	60°C/W



Weight: 2.3g (0.08 oz)

Dimensions

REF.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.24		15.75	0.6		0.62
B		3.23			0.127	
C	12.78		13.79	0.503		0.543
D	9.96		10.36	0.392		0.408
E	0.69		0.94	0.027		0.037
F	1.22		1.32	0.048		0.052
G	4.62		4.83	0.182		0.19
H	0.46		0.61	0.018		0.024
I	2.49		2.84	0.098		0.112
J	2.39		2.69	0.094		0.106
K	6.48		6.88	0.255		0.271
L	3.78		3.89	0.149		0.153
M	15.49	16	16.51	0.61	0.63	0.65
N	2.59		2.9	0.102		0.114
O	0.99		1.55	0.039		0.061
P	0.99		1.55	0.039		0.061
Q		2.67			0.105	

Part Number Selection

Part Number	Voltage [Vpk]	I _{GT} [mA]	Type	Package
CTA/CTB16-xxxB	400, 600, 800, 1000	50mA	Standard	TO-220AB
CTA/CTB16-xxxBW	400, 600, 800, 1000	50mA	Alternistor/No Snubber	TO-220AB
CTA/CTB16-xxxC	400, 600, 800, 1000	25mA	Standard	TO-220AB
CTA/CTB16-xxxCW	400, 600, 800, 1000	35mA	Alternistor/No Snubber	TO-220AB
CTA/CTB16-xxxSW	400, 600, 800, 1000	10mA	Logic Level	TO-220AB

Part Number Designation

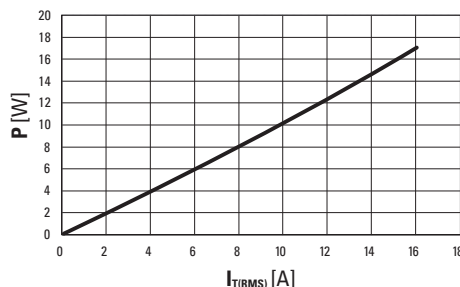
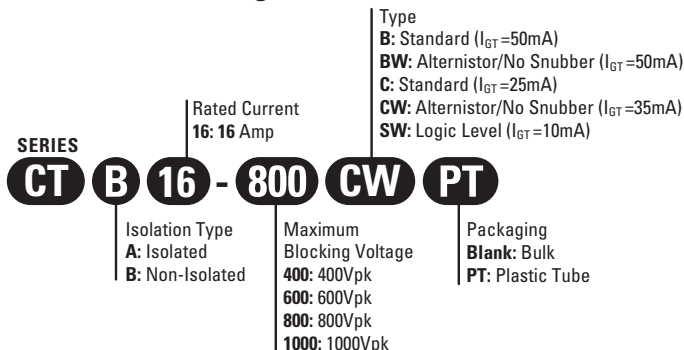


Fig. 1: Power dissipation versus RMS on-state current (full cycle).

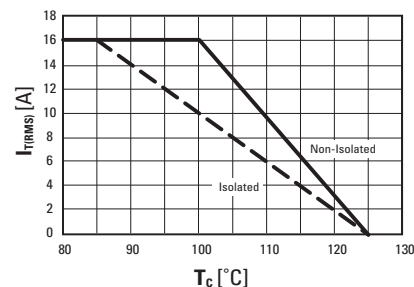


Fig. 2: RMS on-state current versus case temperature (full cycle)

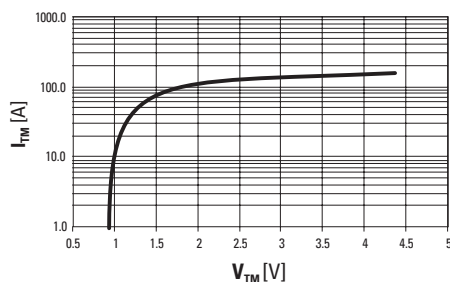


Fig. 3: On-state current versus on-state voltage (instantaneous values)

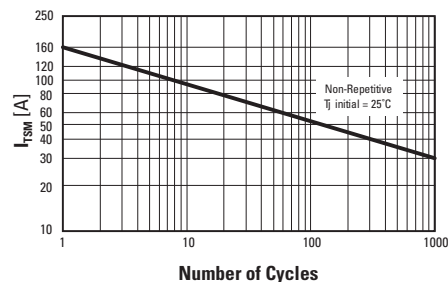


Fig. 4: Non-repetitive surge peak on-state current versus number of cycles.

ISO9001 Certified

Approvals

*UL Recognized Component - E72445
(For CTA series)*

USA

Sales Support (877) 502-5500
Tech Support (877) 702-7700
Fax (619) 710-8540
Email: sales@crydom.com

Crydom Corp
 2320 Paseo de las Americas, Suite 201
 San Diego, CA 92154

EUROPE - UK

Telephone +44 (0) 1202 365070
Fax +44 (0) 1202 365090
Email: intsales@crydom.com
Crydom International Ltd.
7 Cobham Road
Ferndown Industrial Estate
Wimborne, Dorset BH21 7PE

Germany

Telephone +49 (0) 180 3000 506

ASIA - Thailand

Telephone +66 (0)2 665 2517
Fax +66 (0)2 665 2588
Crydom Asia
18/8 Fico Place 12th Floor
Soi Sukhumvit 21 (Asoke)
Klongtoey Nua, Wattana
Bangkok, Thailand 10110