



Applications

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

- **400A Surge**
- **Suitable for General Purpose AC Switching**
- **IGT 50 mA**
- **V_{DRM}/V_{RMM} 400, 600, 800V**

Absolute Maximum Ratings

	CONDITIONS	SYMBOL	RATING
RMS On-State Current (full sine wave)	T _c = 110°C	T0-220AB	I _{T(RMS)} 40A
Non Repetitive Surge Peak On-State Current (Full Cycle, T _j Initial = 25°C)	F = 50 Hz F = 60 Hz	I _{TSM}	380A 400A
I ² t Value for fusing	t _p = 10 ms	I ² t	660A 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/μsec
Peak Gate Current @ T _j = 125°C	t _p = 20 μs	I _{GM}	4A
Average Gate Power Dissipation @ T _j = 125°C		PG(AV)	1W
Storage Temperature Range		T _{stg}	-40 to +150°C
Operating Junction Temperature Range		T _j	-40 to +150°C

Electrical Characteristics

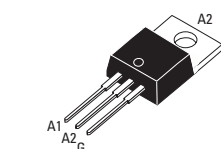
	CONDITIONS	"B"	"BW"
I _{GT} MAX @ V _D = 12 V, R _L = 30Ω ^{NOTE 1}	QI-II-III	50mA	50mA
I _{GT} MAX @ V _D = 12 V, R _L = 30Ω ^{NOTE 1}	QIV	100mA	—
V _{GT} MAX @ V _D = 12 V, R _L = 30Ω	Q-AII	1.3V	1.3V
V _{GD} MIN @ V _D = V _{DRM} , R _L = 3.3kΩ	Q-AII	0.2V	0.2V
I _H MAX @ I _T = 100 mA ^{NOTE 2}		75mA	75mA
I _L MAX @ I _G = 1.2 I _{GT}	QI-III-IV	75mA	75mA
I _L MAX @ I _G = 1.2 I _{GT}	Q-II	100mA	100mA
dv/dt MIN @ V _D = 67%V _{DRM} (gate open) ^{NOTE 2}	T _j = 125°C	500V/μs	1000V/μs
(di/dt) _c MIN @ (di/dt) _c = 13.3 A/ms ^{NOTE 2}	T _j = 125°C	10V/μs	50V/μs
(di/dt) _c MIN without snubber ^{NOTES 2 & 4}	T _j = 125°C	—	22A/ms

Static Characteristics

V _T MAX @ I _{TM} = 17 A, t _p = 380μs ^{NOTE 2}	T _j = 25°C	1.6V
V _{to} MAX @ Threshold Voltage ^{NOTE 2}	T _j = 125°C	0.8V
R _d MAX @ Dynamic Resistance ^{NOTE 2}	T _j = 125°C	16mΩ
I _{DRM} MAX @ V _{DRM} = V _{RMM}	T _j = 25°C	5μA
I _{RRM} MAX @ V _{DRM} = V _{RMM}	T _j = 125°C	3mA

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.
4. Commutating dv/dt = 50V/μs, (exponential to 200Vpk)



T0-220AB Non-Isolated
(CTB40)

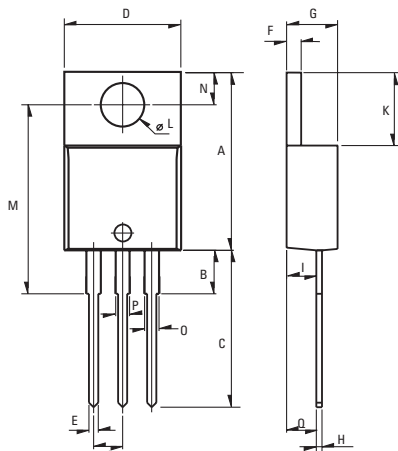


Thermal Resistances

		SYMBOL	RATING
Junction to Case (AC)	T0-220AB	$R_{th(j-c)}$	0.78°C/W
Junction to Ambient	T0-220AB	$R_{th(j-a)}$	60°C/W

Part Number Designation

SERIES	Rated Current	Type
CTB	40: 40 Amp	B: Standard ($I_{GT}=50mA$)
40		BW: No Snubber/Alernistor ($I_{GT}=50mA$)
- 800	Maximum Blocking Voltage	Packaging
B	400: 400Vpk	Blank: Bulk
PT	600: 600Vpk	PT: Plastic Tube
	800: 800Vpk	



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	

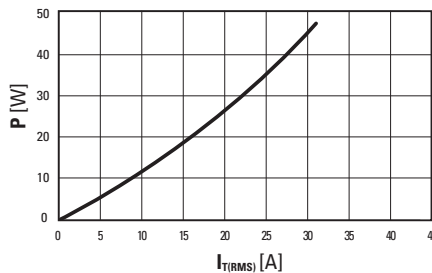


Fig. 1: Power dissipation versus RMS on-state current (full cycle).

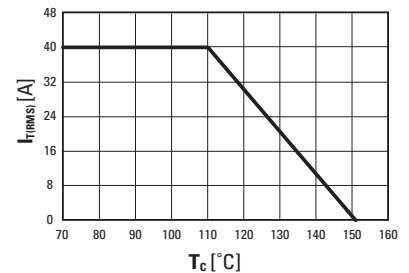


Fig. 2: RMS on-state current versus case temperature (full cycle)

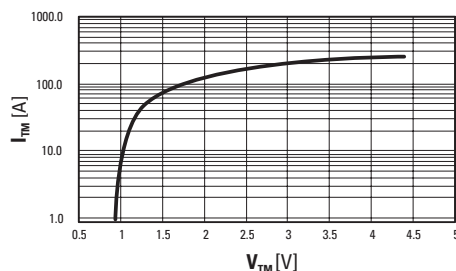


Fig. 3: On-state current versus on-state voltage (instantaneous values)

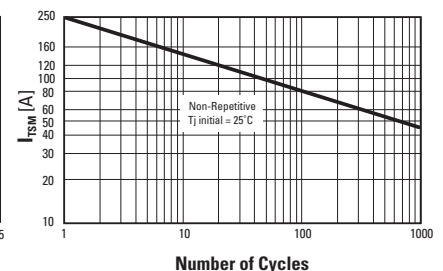


Fig. 4: Non-repetitive surge peak on-state current versus number of cycles.

ISO9001 Certified

Approvals

UL - Pending

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