C3 Semiconductor, LLC

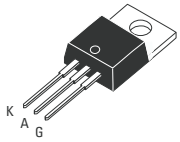
Applications

- *Motor Control*
- *Overvoltage Crowbar Protection*
- *Capacitive Discharge Ignition*
- *Voltage Regulation*
- *Welding Equipment*
- *Capacitive Filter Soft Start (Inrush Current Control)*

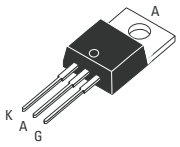
- ***Suitable for General Purpose AC Switching***
- ***IGT 40mA Max.***
- ***Isolated and Non-Isolated Tab***
- ***VDRM/VRMM 400, 600, 800, 1000V***

CYNA/CYNB25

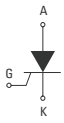
25Amp - 400/600/800/1000V - ***SCR***



TO-220AB Isolated
(CYNA25)



TO-220AB Non-Isolated
(CYNB25)



Absolute Maximum Ratings

		CONDITIONS	SYMBOL	RATING
RMS On-State Current (full sine wave)	Tc = 100˚C Tc = 75˚C	TO-220AB TO-220AB Iso	$I_{T(RMS)}$	25A
Average On-State Current	Tc = 100°C Tc = 75°C	TO-220AB TO-220AB Iso	$I_{T(AV)}$	16A
Non Repetitive Surge Peak On-State Current (Full Cycle, Tj Initial = 25˚C)		F = 50 Hz F = 60 Hz	I_{TSM}	320A 350A
I^2t Value for fusing		tp = 10 ms	I^2t	510A^2s
Critical rate of rise of on-state current I_G=2 x I_{GT} , tr<100 ns, 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 @ Tj = 125˚C			PG(AV)	1W
Storage Temperature Range			T_{stg}	-40 to +150˚C
Operating Junction Temperature Range			T_j	-40 to +125˚C
Isolation Voltage (CYNA Series only)			V_{ISO}	2500V_{RMS}
Maximum Peak Reverse Gate Voltage			V_{RGM}	5V

Electrical Characteristics NOTE 1

I_{GT} MAX @ V_D =12 V, R_L = 30Ω		40mA
V_{GT} MAX @ V_D =12 V, R_L = 30Ω		1.3V
V_{GD} MIN @ V_D =V_{DRM}, R_L = 3.3kΩ	Tj = 125˚C	0.2V
I_H MAX @ I_T = 500 mA (gate open)		50mA
I_L MAX @ I_G = 1.2 I_{GT}		90mA
dv/dt MIN @ V_D = 67%V_{DRM} (gate open)	Tj = 125˚C	1000V/µs
V_{TM} MAX @ I_{TM} =50 A, tp = 380µs	Tj = 25˚C	1.6V
I_{DRM} MAX @ V_{DRM} = V_{RRM}	Tj = 25˚C	5µA
I_{RRM} MAX @ V_{DRM} = V_{RRM}	Tj = 125˚C	4mA

GENERAL NOTES

1. All parameters at 25 degrees C unless otherwise specified.

ISO9001 Certified

CYNA/CYNB25

25Amp - 400/600/800/1000V - SCR

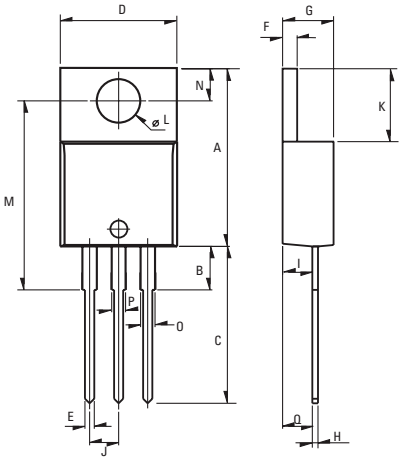
C3 Semiconductor, LLC

Thermal Resistances

		SYMBOL	RATING
Junction to Case (AC)	TO-220AB	$R_{th(j-c)}$	1.0°C/W
Junction to Case (AC)	TO-220AB Isolated	$R_{th(j-c)}$	1.9°C/W
Junction to Ambient	TO-220AB	$R_{th(j-a)}$	60°C/W
Junction to Ambient	TO-220AB Isolated	$R_{th(j-a)}$	60°C/W

Part Number Designation

SERIES **CYN** | **B** Isolation Type: **A:** Isolated, **B:** Non-Isolated | **25** Rated Current: **25:** 25 Amp | **800** Maximum Blocking Voltage: **400:** 400Vpk, **600:** 600Vpk, **800:** 800Vpk, **1000:** 1000Vpk | **PT** Packaging: **Blank:** Bulk, **PT:** Plastic Tube



Weight: 2.3g (0.08 oz)

Dimensions

REF.	Millimeters Min.	Typ.	Max.	Inches 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	

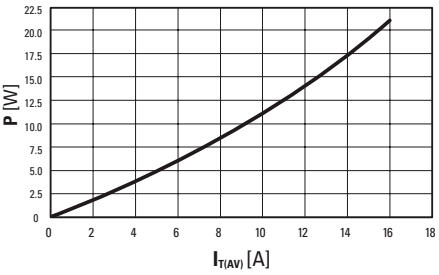


Fig. 1: Power dissipation versus average on-state current.

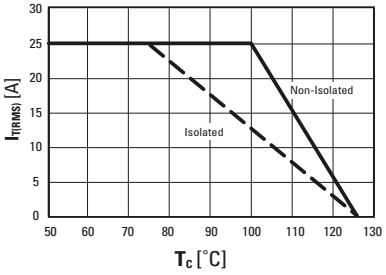


Fig. 2: RMS on-state current versus case temperature (full cycle)

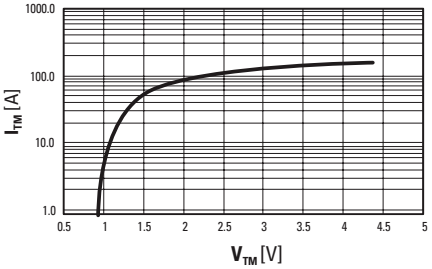


Fig. 3: On-state current versus on-state voltage (instantaneous values)

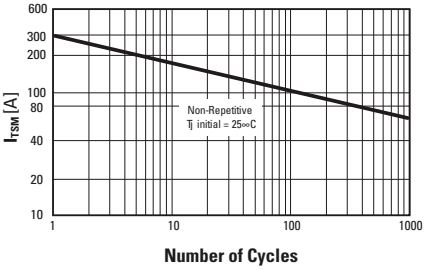


Fig. 4: Non-repetitive surge peak on-state current versus number of cycles.

ISO9001 Certified

Approvals

UL Recognized Component - E72445
(For CYNA series)

For recommended applications and more information contact:
USA: Sales Support (888) 882-8689
C3 Semiconductors, LLC. 2320 Paseo de las Americas, Ste. 104, San Diego, CA 92154
Email: sales@c3semi.com WEB SITE: http://www.C3semi.com