



semi 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 25 mA Max.

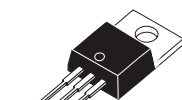
> VDRM/VRMM 400, 600, 800, 1000V

CYNA/CYNB16

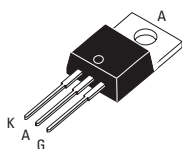
16Amp - 400/600/800/1000V - **SCR**

Absolute Maximum Ratings

	CONDITIONS	SYMBOL	RATING
RMS On-State Current (full sine wave)	$T_c = 110^\circ\text{C}$ $T_c = 95^\circ\text{C}$ T0-220AB T0-220AB Iso	$I_T(\text{RMS})$	16A
Average On-State Current	$T_c = 110^\circ\text{C}$ $T_c = 95^\circ\text{C}$ T0-220AB T0-220AB Iso	$I_T(\text{AV})$	10A
Non Repetitive Surge Peak On-State Current (Full Cycle, T_j Initial = 25°C)	F = 50 Hz F = 60 Hz	I_{TSM}	190A 200A
I^2t Value for fusing	$t_p = 10 \text{ ms}$	I^2t	$180\text{A}^2\text{s}$
Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$, $t_r < 100 \text{ ns}$, $T_j = 125^\circ\text{C}$		di/dt	$100\text{A}/\mu\text{s}$
Peak Gate Current @ $T_j = 125^\circ\text{C}$	$t_p = 20 \mu\text{s}$	I_{GM}	4A
Average Gate Power Dissipation @ $T_j = 125^\circ\text{C}$		$P_G(\text{AV})$	1W
Storage Temperature Range		T_{stg}	-40 to $+150^\circ\text{C}$
Operating Junction Temperature Range		T_j	-40 to $+125^\circ\text{C}$
Isolation Voltage (CYNA Series only)		V_{ISO}	$2500V_{\text{RMS}}$
Maximum Peak Reverse Gate Voltage		V_{RGM}	5V



TO-220AB Isolated
(CYNA25)



TO-220AB Non-Isolated
(CYNB25)



Electrical Characteristics ^{NOTE 1}

$I_{GT} \text{ MAX @ } V_D = 12 \text{ V, } R_L = 30\Omega$		25mA
$V_{GT} \text{ MAX @ } V_D = 12 \text{ V, } R_L = 30\Omega$		1.3V
$V_{GD} \text{ MIN @ } V_D = V_{\text{DRM}}, R_L = 3.3\text{k}\Omega$	$T_j = 125^\circ\text{C}$	0.2V
$I_H \text{ MAX @ } I_T = 500 \text{ mA (gate open)}$		40mA
$I_L \text{ MAX @ } I_G = 1.2 I_{GT}$		60mA
$dv/dt \text{ MIN @ } V_D = 67\% V_{\text{DRM}} \text{ (gate open)}$	$T_j = 125^\circ\text{C}$	$500\text{V}/\mu\text{s}$
$V_{\text{TM}} \text{ MAX @ } I_{\text{TM}} = 32 \text{ A, } t_p = 380\mu\text{s}$	$T_j = 25^\circ\text{C}$	1.6V
$I_{\text{DRM}} \text{ MAX @ } V_{\text{DRM}} = V_{\text{RRM}}$	$T_j = 25^\circ\text{C}$	5μA
$I_{\text{RRM}} \text{ MAX @ } V_{\text{DRM}} = V_{\text{RRM}}$	$T_j = 125^\circ\text{C}$	2mA

GENERAL NOTES

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

ISO9001 Certified



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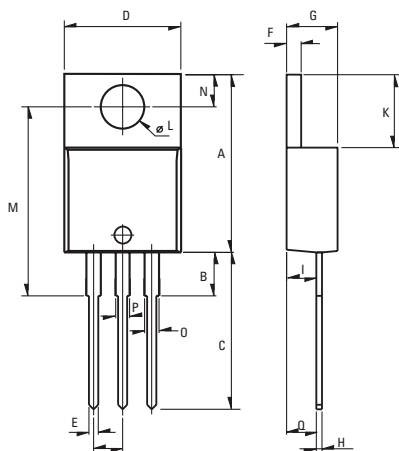
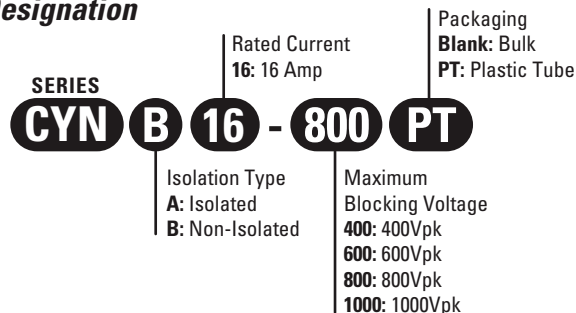
CYNA/CYNB16

16Amp - 400/600/800/1000V - SCR

Thermal Resistances

		SYMBOL	RATING
Junction to Case (AC)	T0-220AB	$R_{th(j-c)}$	1.2°C/W
Junction to Case (AC)	T0-220AB Isolated	$R_{th(j-c)}$	2.1°C/W
Junction to Ambient	T0-220AB	$R_{th(j-a)}$	60°C/W
Junction to Ambient	T0-220AB Isolated	$R_{th(j-a)}$	60°C/W

Part Number Designation



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	

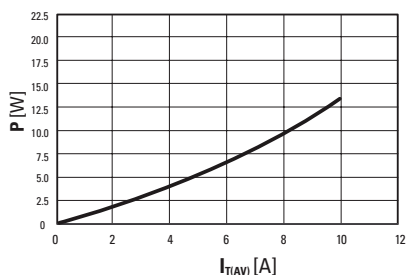


Fig. 1: Power dissipation versus average on-state current.

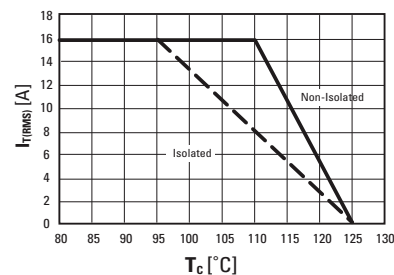


Fig. 2: RMS on-state current versus case temperature (full cycle)

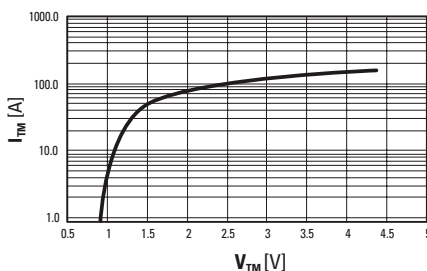


Fig. 3: On-state current versus on-state voltage (instantaneous values)

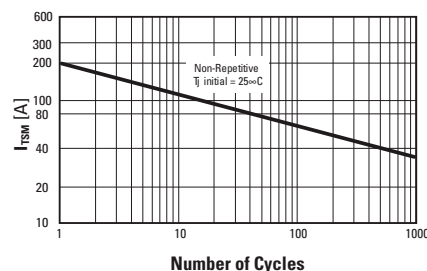


Fig. 4: Non-repetitive surge peak on-state current versus number of cycles.

ISO9001 Certified

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Approvals

UL Recognized Component - E72445
(For CYNA series)

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