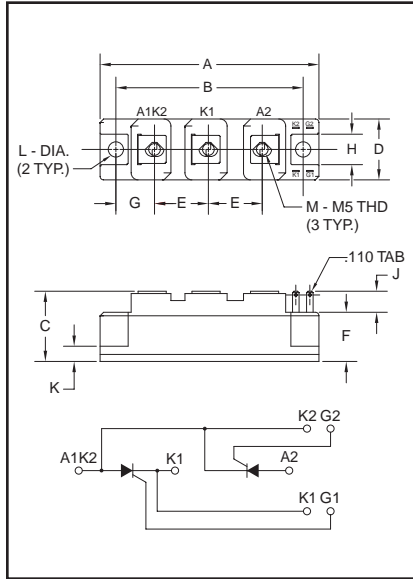


**Dual SCR**  
**POW-R-BLOK™ Modules**  
**25 Amperes/1200-1600 Volts**



**Outline Drawing**

Dimension	Inches	Millimeters
A	3.681 Max.	93.5 Max.
B	3.150	80
C	1.181 Max.	30 Max.
D	1.024 Max.	26 Max.
E	0.906	23
F	0.827	21
G	0.650	16.5
H	0.512	13
J	0.354	9
K	0.256	6.5
L	0.256 Dia.	Dia. 6.5
M	M5 Metric	M5



**CM4312A2, CM4316A2**  
**Dual SCR POW-R-BLOK™ Modules**  
**25 Amperes/1200-1600 Volts**

**Description:**

Powerex Dual SCR POW-R-BLOK™ Modules are designed for use in applications requiring phase control and isolated packaging. The modules are isolated for easy mounting with other components on common heatsinks.

**Features:**

- Isolated Mounting
- Glass Passivated Chips
- Metal Baseplate
- Low Thermal Impedance

**Applications:**

- Battery Supplies
- Bridge Circuits
- AC and DC Motor Control
- Tap Changers
- Lighting Control

**Ordering Information:**

Select the complete eight digit module part number you desire from the table below. Example: CM4312A2 is a 1200 Volt, 25 Ampere Dual SCR POW-R-BLOK™ Module.

Type	Voltage Volts (x100)	Current Rating Amperes (25)
CM43	12 16	A2



Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

**CM4312A2, CM4316A2**  
**Dual SCR POW-R-BLOK™ Modules**  
 25 Amperes/1200-1600 Volts

**Absolute Maximum Ratings**

Characteristics	Symbol	CM4312A2	CM4316A2	Units
Peak Forward Blocking Voltage	$V_{DRM}$	1200	1600	Volts
Transient Peak Forward Blocking Voltage (Non-Repetitive), $t < 5ms$	$V_{DSM}$	1350	1700	Volts
DC Forward Blocking Voltage	$V_{D(DC)}$	960	1280	Volts
Peak Reverse Blocking Voltage	$V_{RRM}$	1200	1600	Volts
Transient Peak Reverse Blocking Voltage (Non-Repetitive), $t < 5ms$	$V_{RSM}$	1350	1700	Volts
DC Reverse Blocking Voltage	$V_{R(DC)}$	960	1280	Volts
RMS On-State Current	$I_{T(RMS)}$	39	39	Amperes
Average On-State Current, $T_C = 86^\circ C$	$I_{T(AV)}$	25	25	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz)	$I_{TSM}$	490	490	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	$I_{TSM}$	445	445	Amperes
$I^2t$ (for Fusing), 8.3 milliseconds	$I^2t$	1000	1000	$A^2sec$
Critical Rate-of-Rise of On-State Current*	$di/dt$	100	100	Amperes/ $\mu s$
Peak Gate Power Dissipation	$P_{GM}$	5.0	5.0	Watts
Average Gate Power Dissipation	$P_{G(AV)}$	0.5	0.5	Watts
Peak Forward Gate Voltage	$V_{GFM}$	10	10	Volts
Peak Reverse Gate Voltage	$V_{GRM}$	5.0	5.0	Volts
Peak Forward Gate Current	$I_{GFM}$	2.0	2.0	Amperes
Storage Temperature	$T_{STG}$	-40 to 125	-40 to 125	$^\circ C$
Operating Temperature	$T_j$	-40 to 125	-40 to 125	$^\circ C$
Maximum Mounting Torque M6 Mounting Screw	—	26	26	in.-lb.
Maximum Mounting Torque M5 Terminal Screw	—	17	17	in.-lb.
Module Weight (Typical)	—	160	160	Grams
V Isolation	$V_{RMS}$	2500	2500	Volts

\* $T_j = 125^\circ C$ ,  $I_G = 0.5A$ ,  $V_D = 1/2 V_{DRM}$



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CM4312A2, CM4316A2  
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**Electrical and Thermal Characteristics,  $T_j = 25^\circ\text{C}$  unless otherwise specified**

Characteristics	Symbol	Test Conditions	CM4312A2/CM4316A2	Units
<b>Blocking State Maximums</b>				
Forward Leakage Current, Peak	$I_{\text{DRM}}$	$T_j = 125^\circ\text{C}$ , $V_{\text{DRM}} = \text{Rated}$	10	mA
Reverse Leakage Current, Peak	$I_{\text{RRM}}$	$T_j = 125^\circ\text{C}$ , $V_{\text{RRM}} = \text{Rated}$	10	mA
<b>Conducting State Maximums</b>				
Peak On-State Voltage	$V_{\text{TM}}$	$I_{\text{TM}} = 75\text{A}$	1.8	Volts
<b>Switching Minimums</b>				
Critical Rate-of-Rise of Off-State Voltage	dv/dt	$T_j = 125^\circ\text{C}$ , $V_{\text{D}} = 2/3 V_{\text{DRM}}$	500	Volts/ $\mu\text{s}$
<b>Thermal Maximums</b>				
Thermal Resistance, Junction-to-Case	$R_{\theta(\text{J-C})}$	Per Module	0.8	$^\circ\text{C/Watt}$
Thermal Resistance, Case-to-Sink (Lubricated)	$R_{\theta(\text{C-S})}$	Per Module	0.2	$^\circ\text{C/Watt}$
<b>Gate Parameters Maximums</b>				
Gate Current-to-Trigger	$I_{\text{GT}}$	$V_{\text{D}} = 6\text{V}$ , $R_{\text{L}} = 2\Omega$	50	mA
Gate Voltage-to-Trigger	$V_{\text{GT}}$	$V_{\text{D}} = 6\text{V}$ , $R_{\text{L}} = 2\Omega$	3.0	Volts
Non-Triggering Gate Voltage	$V_{\text{GDM}}$	$T_j = 125^\circ\text{C}$ , $V_{\text{D}} = 1/2 V_{\text{DRM}}$	0.25	Volts

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