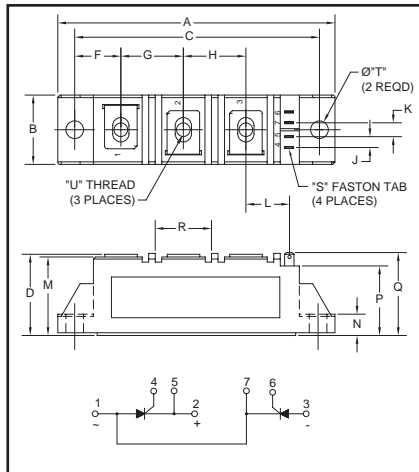
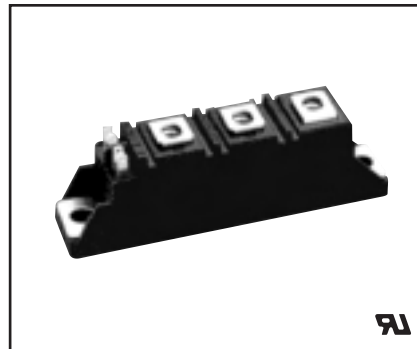


Dual SCR POW-R-BLOK™ Module 60 Amperes/1600 Volts



Outline Drawing

Dimension	Inches	Millimeters
A	3.62	92.0
B	0.81	20.5
C	3.15	80.0
D	1.18	30.0
F	0.59	15.0
G	0.79	20.0
H	0.79	20.0
J	0.16	4.0
K	0.23	5.8
L	0.61	15.5
M	1.14	29.0
N	0.24	6.1
P	0.94	24.0
Q	1.18	30.0
R	0.71	18.0
S	0.11 x 0.03	2.8 x 0.8
T	0.25 Dia.	6.3 Dia.
U	M5	M5



CD43__60
Dual SCR POW-R-BLOK™ Module
60 Amperes/1600 Volts

Description:

Powerex Dual SCR Modules are designed for use in applications requiring phase control and isolated packaging. The modules are isolated for easy mounting with other components on a common heatsink. POW-R-BLOK™ has been tested and recognized by the Underwriters Laboratories (QQQX2 Power Semiconductors).

Features:

- Electrically Isolated Heatsinking
- Metal Baseplate
- Low Thermal Impedance
- Quick Connect Gate Terminal
- UL Recognized

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: CD431260 is a 1200 Volt, 60 Ampere Dual SCR POW-R-BLOK™ Module.

Type	Voltage Volts (x100)	Current Amperes
CD43	08	60
	12	
	16	



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

CD43 _60
Dual SCR POW-R-BLOK™ Module
 60 Amperes/1600 Volts

Absolute Maximum Ratings

Characteristics	Symbol	Conditions	CD43 _60	Units
Repetitive Peak Forward Blocking Voltage	V_{DRM}	—	1600	Volts
Repetitive Peak Reverse Blocking Voltage	V_{RRM}	—	1600	Volts
Non-Repetitive Peak Forward Blocking Voltage	V_{DSM}	—	$V_{DRM} + 100$	Volts
Non-Repetitive Peak Reverse Blocking Voltage	V_{RSM}	—	$V_{RRM} + 100$	Volts
RMS Forward Current	$I_{T(RMS)}$	—	110	Amperes
Average Forward Current	$I_{T(AV)}$	180° Conduction, $T_C = 92^\circ\text{C}$	60	Amperes
Peak Half-Cycle Surge (Non-Repetitive) On-State Current	I_{TSM}	$t = 8.3\text{ms}$, 100% V_{RRM} Reapplied	1360 ^a	Amperes
		$t = 10\text{ms}$, 100% V_{RRM} Reapplied	1300 ^a	Amperes
i^2t (for Fusing) for One-Cycle	i^2t	$t = 8.3\text{ms}$, 100% V_{RRM} Reapplied	7700 ^b	A ² sec
		$t = 10\text{ms}$, 100% V_{RRM} Reapplied	8450 ^b	A ² sec
Maximum Rate-of-Rise of On-State Current (Non-Repetitive)*	di/dt	$I_{TM} = \pi I_{T(AV)}$, $t_r < 0.5\mu\text{s}$, $t_p > 6\mu\text{s}$	150	Amperes/ μs
Storage Temperature	T_{STG}	—	-40 to 125	°C
Operating Temperature	T_j	—	-40 to 125	°C
Maximum Mounting Torque M5 Mounting Screw	—	—	4.5 to 5.5	Nm
Maximum Mounting Torque M5 Terminal Screw	—	—	2.7 to 3.3	Nm
Module Weight (Typical)	—	—	140	Grams
			5	oz.
V Isolation	V_{RMS}	—	3500	Volts

* $T_j = 25^\circ\text{C}$, $I_G = 500\text{mA}$, $V_D = 0.67 V_{DRM}$ (Rated)

a. At 1200 volts and below this value is 8% higher.

b. At 1200 volts and below this value is 16% higher.

CD43_60
Dual SCR POW-R-BLOK™ Module
 60 Amperes/1600 Volts

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

Characteristics	Symbol	Test Conditions	CD43_60	Units
Blocking State Maximums				
Forward Off-State Current, Peak	I_{DRM}	$T_j = 125^\circ\text{C}$	20	mA
Reverse Off-State Current, Peak	I_{RRM}	$T_j = 125^\circ\text{C}$	20	mA
Conducting State Maximums				
Peak On-State Voltage	V_{TM}	$I_{\text{TM}} = 220\text{A}$	1.55	Volts
Peak On-State Voltage Coefficients, Full Range	V_{TM}	$T_j = 125^\circ\text{C}$, $I = 15\% I_{\text{T(AV)}} \text{ to } I_{\text{TSM}}$ $V_{\text{TM}} =$ $A + B \text{ Ln } I + C I + D \text{ Sqrt } I$	A = 0.433 B = 0.178 C = 0.00370 D = -0.0458	
Threshold Voltage, Low-Level	$V_{\text{(TO)1}}$	$T_j = 125^\circ\text{C}$,	0.762	Volts
Slope Resistance, Low-Level	r_{T1}	$I = 15\% I_{\text{T(AV)}} \text{ to } \pi I_{\text{T(AV)}}$	3.51	$\text{m}\Omega$
Threshold Voltage, High-Level	$V_{\text{(TO)2}}$	$T_j = 125^\circ\text{C}$,	0.819	Volts
Slope Resistance, High-Level	r_{T2}	$I = \pi I_{\text{T(AV)}} \text{ to } I_{\text{TSM}}$	3.16	$\text{m}\Omega$
Switching Minimums				
Critical Rate-of-Rise of Off-State Voltage	dv/dt	$T_j = 125^\circ\text{C}$, Gate Open, Linear to $0.67 V_{\text{DRM}}$	500	Volts/ μs
Thermal Maximums				
Thermal Resistance, Junction-to-Case	$R_{\theta(\text{J-C})}$	Per Module, Both Conducting	0.195	$^\circ\text{C/Watt}$
		Per Junction, Both Conducting	0.390	$^\circ\text{C/Watt}$
Thermal Resistance, Case-to-Sink (Lubricated)	$R_{\theta(\text{C-S})}$	Per Module	0.1	$^\circ\text{C/Watt}$
Gate Parameters Maximums				
Gate Current-to-Trigger	I_{GT}	$T_j = 25^\circ\text{C}$, $V_{\text{D}} = 6\text{V}$	120	mA
Gate Voltage-to-Trigger	V_{GT}	$T_j = 25^\circ\text{C}$, $V_{\text{D}} = 6\text{V}$	2.5	Volts
Non-Triggering Gate Voltage	V_{GDM}	$T_j = 125^\circ\text{C}$, $V_{\text{D}} = V_{\text{DRM}}$	0.25	Volts
Peak Forward Gate Current	I_{GTM}	—	3.0	Amperes
Peak Reverse Gate Voltage	V_{GRM}	—	10	Volts