

PHD**D240A 1K6V...SERIES****STUD TYPE DIODE****Features**

- Hermetic metal case with ceramic insulator
- High surge current capabilities
- Stud cathode and stud anode version

240A**Typical Applications**

- Converters
- Power supplies
- Machine tool controls

Major Ratings and Characteristics

Parameters	D240A 1K6V	Units
$I_{F(AV)}$	240	A
$@ T_{hs}$	120	°C
$I_{F(RMS)}$	520	A
I_{FSM} @ 50Hz	8250	A
@ 60Hz	8640	A
$I^2 t$ @ 50Hz	340	KA ² s
@ 60Hz	311	KA ² s
V_{RRM} range	1600	V
T_J	- 40 to 180	°C

**case style**

Voltage Ratings

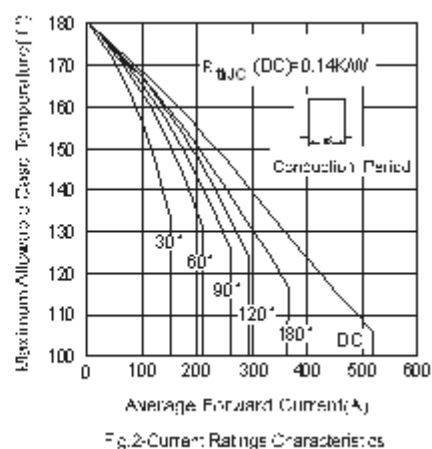
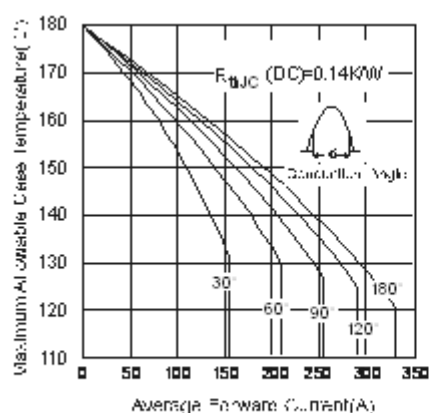
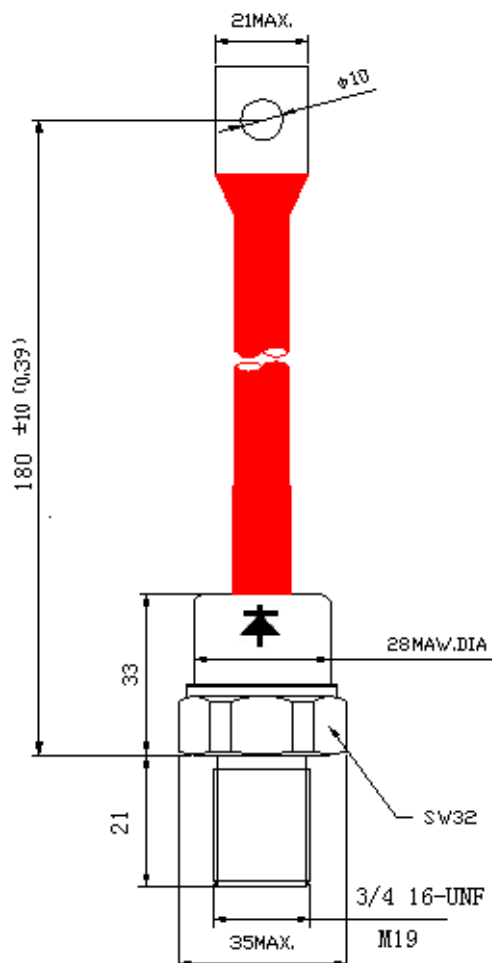
D240A 1K6V	Voltage Code	V_{RRM} , maximum repetitive peak reverse voltage V	V_{RSM} , maximum non- repetitive peak rev. voltage V	I_{RRM} max. @ $T_J = T_{J \text{ max.}}$ mA
	08	800	900	15
	12	1200	1300	
	14	1400	1500	
	16	1600	1700	

Forward Conduction

Parameter	D240A	Units	Conditions
$I_{F(AV)}$ Max. average forward current @ Heatsink temperature	240	A	180° conduction, half sine wave
	120	°C	Double side (single side) cooled
$I_{F(RMS)}$ Max.RMS forward current	520	A	DC@110°C case temperature
I_{FSM} , Max. peak, one-cycle forward, non-repetitive surge current	8250	A	t = 10ms No voltage
	8640		t = 8.3ms reapplied
	6940		t = 10ms 100% V_{RRM}
	7270		t = 8.3ms reapplied
$I^2 t$ Maximum $I^2 t$ for fusing	340	KA ² s	t = 10ms No voltage
	311		t = 8.3ms reapplied
	241		t = 10ms 100% V_{RRM}
	220		t = 8.3ms reapplied
$I^2 \sqrt{t}$ Maximum $I^2 \sqrt{t}$ for fusing	3400	KA ² √s	t = 0.1 to 10ms, no voltage reapplied
V_{FM} Max. forward voltage drop	1.22	V	$I_{pk} = 942A$, $T_J = T_{J \text{ max.}}$, $t_p=10ms$ sinusoidal wave
r_{f1} Low level value of threshold voltage	0.49	MΩ	$(16.7\% \times \pi \times I_{F(AV)}) < 1 < \pi \times I_{F(AV)}$, $T_J=T_{J \text{ max}}$
r_{f2} High level value of forward slope resistance	0.49		$(1 > \pi \times I_{F(AV)})$, $T_J=T_{J \text{ max}}$

Thermal and Mechanical Specification

Parameter	D240A	Units	Conditions
T_J Max.junction operating temperature range	-40 to 180	°C	
T_{stg} Max. storage temperature range	-40 to 200		
R_{thJC} Max,thermal resistance,junction to case	0.14	K/W	DC operation
R_{thCS} Max. thermal resistance,Case to heatsink	0.08		DC operation single(double) side cooled
T Max.allowed Mounting torque, ± 10%	37	N	
wt Approximate weight	320	g	



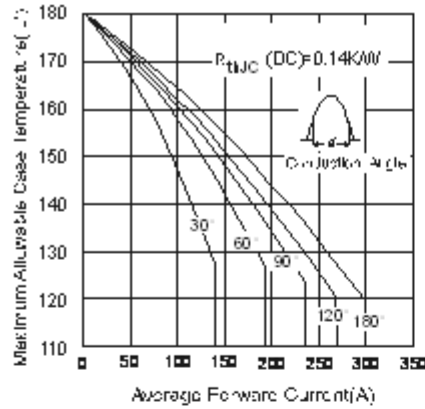


Fig.3-Current Ratings Characteristics

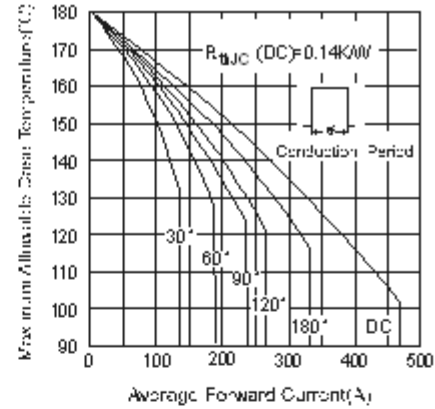


Fig.4-Current Ratings Characteristics

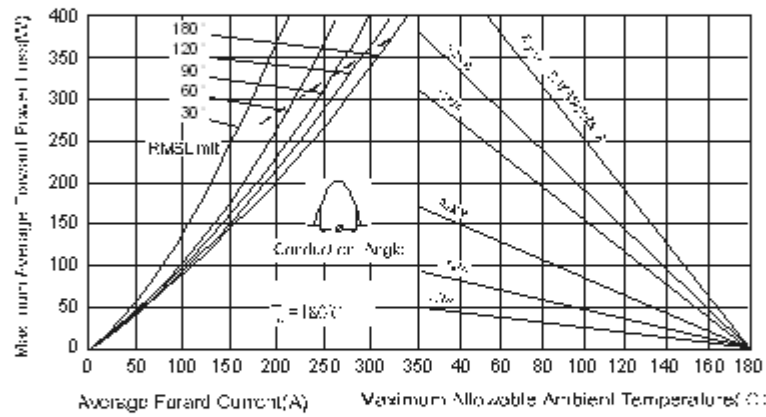


Fig.5-Forward Power Loss Characteristics

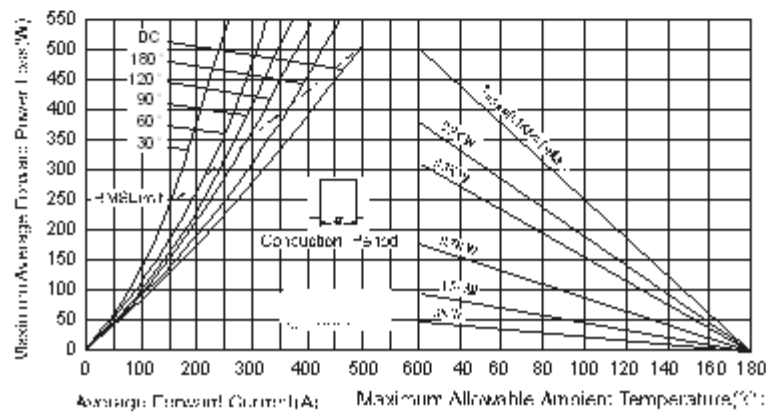


Fig.6-Forward Power Loss Characteristics

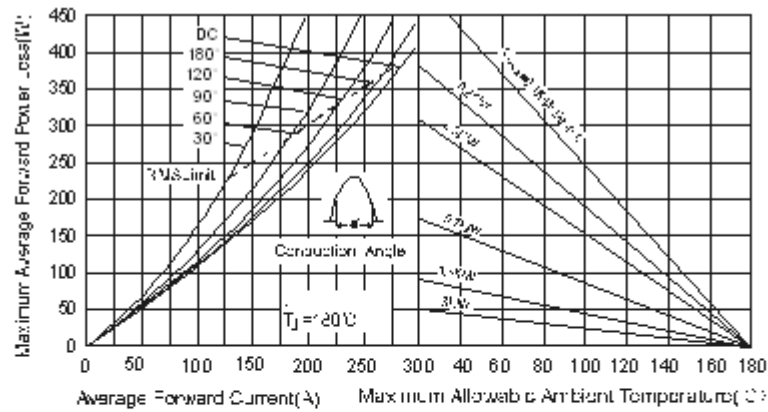


Fig.7-Forward Power Loss Characteristics

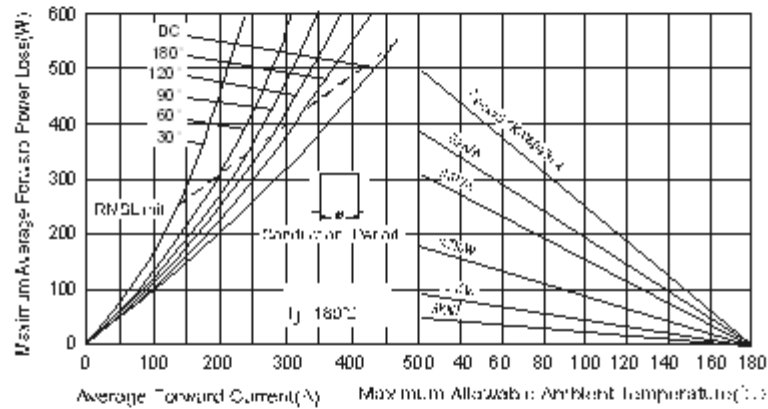


Fig.8-Forward Power Loss Characteristics

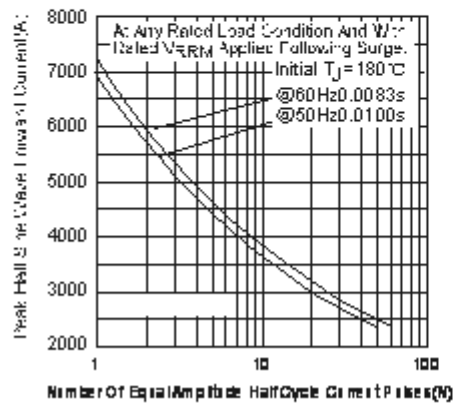


Fig.9-Maximum Non-Repulsive Surge Current

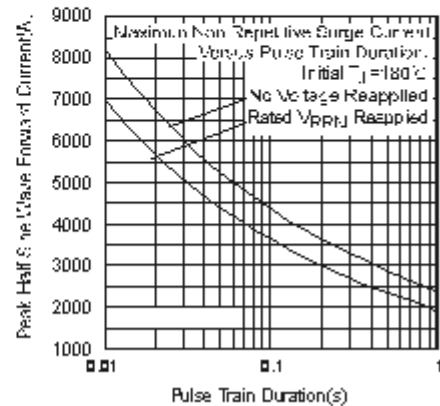


Fig.10-Maximum Non-Repulsive Surge Current

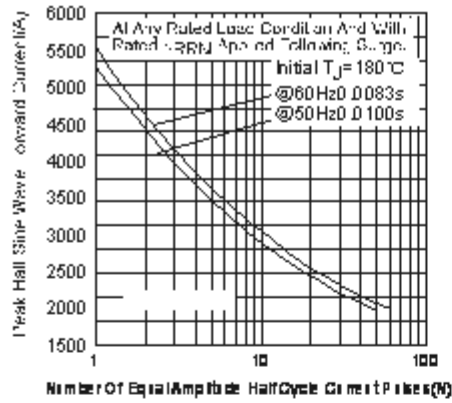


Fig.11-Maximum Non-Repetitive Surge Current

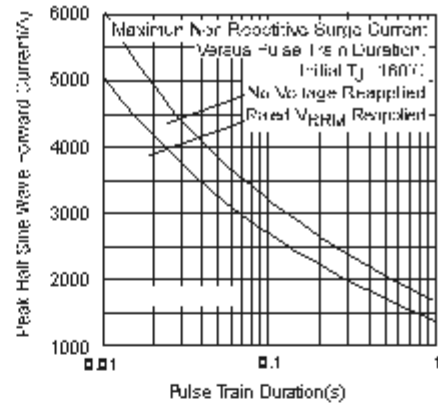


Fig.12-Maximum Non-Repetitive Surge Current

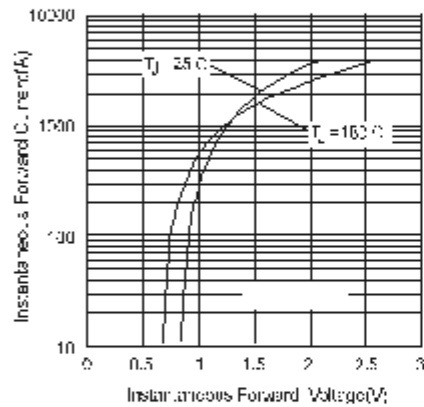


Fig.13-Forward Voltage Drop Characteristics

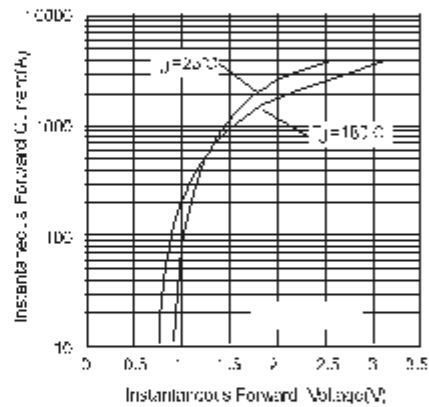


Fig.14-Forward Voltage Drop Characteristics

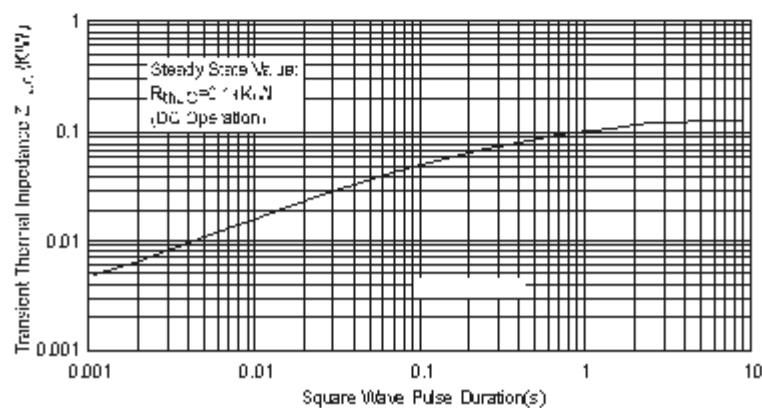


Fig.15-Thermal Impedance Z_{thJC} Characteristics