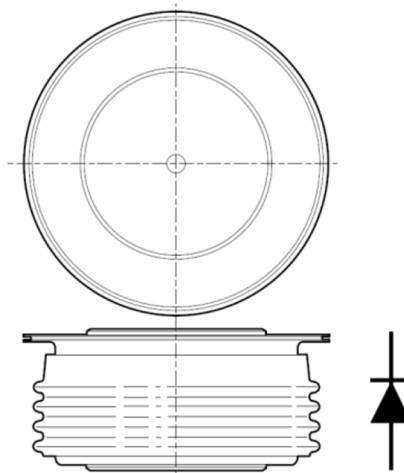


RoHS
Compliant



Features

- Double Side Cooling
- High Surge Capability

Key Parameters

Part Number	Repetitive Peak Voltages V_{DRM} and V_{RRM} V	$I_{F(AV)}$	I_{FSM}	Conditions
MPRD1510G14	1400	1510A	16800A	$V_{RSM} = V_{RRM} + 100V$

Current Ratings

$T_{case} = 75^{\circ}C$ unless stated otherwise

Symbol	Parameter	Test Conditions	Max.	Units
$I_{F(AV)}$	Mean forward current	Half wave resistive load	1780	A
$I_{F(RMS)}$	RMS value	-	2790	
I_F	Continuous (direct) on-state current	-	2520	

$T_{case} = 100^{\circ}C$ unless stated otherwise

Symbol	Parameter	Test Conditions	Max.	Units
Double Side Cooled				
$I_{F(AV)}$	Mean forward current	Half wave resistive load	1510	A
$I_{F(RMS)}$	RMS value	-	2370	
I_F	Continuous (direct) on-state current	-	2140	

Surge Ratings

Symbol	Parameter	Test Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) on-state current	10ms half sine, $T_{case} = 190^{\circ}C$ $V_R = 0$	16.8	kA
I^2t	I^2t for fusing		1.41	MA ² s

Thermal and Mechanical Ratings

Symbol	Parameter	Test Conditions	Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance – junction to case	Double side cooled DC	-	0.035	°C/W
$R_{th(c-h)}$	Thermal resistance – case to heatsink		-	0.008	
T_{vj}	Virtual junction temperature	Blocking V_{DRM} / V_{RRM}	-	190	°C
T_{stg}	Storage temperature range		-40		
F_m	Clamping force		12	18	kN

Characteristics

Symbol	Parameter	Test Conditions	Min.	Max.	Units
V_{FM}	Forward voltage	At 1500A peak, $T_{case} = 25^{\circ}C$	-	1.2	V
I_{RM}	Peak reverse current	At V_{DRM} , $T_{case} = 190^{\circ}C$	-	60	mA
Q_s	Total stored charge	$I_F = 1000A$, $dI_{RR}/dt = 10A/\mu s$ $T_{case} = 190^{\circ}C$, $V_R = 100V$	-	2000	μC
V_{TO}	Threshold voltage	At $T_{vj} = 190^{\circ}C$	-	0.78	V
Γ	Slope resistance		-	0.188	m Ω

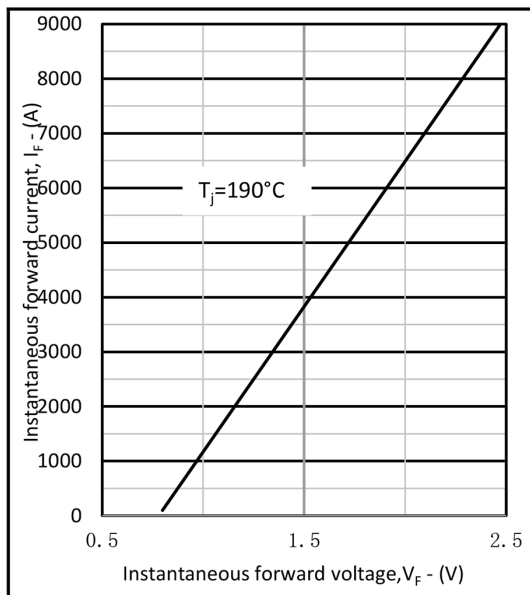


Fig.2 Maximum forward characteristics

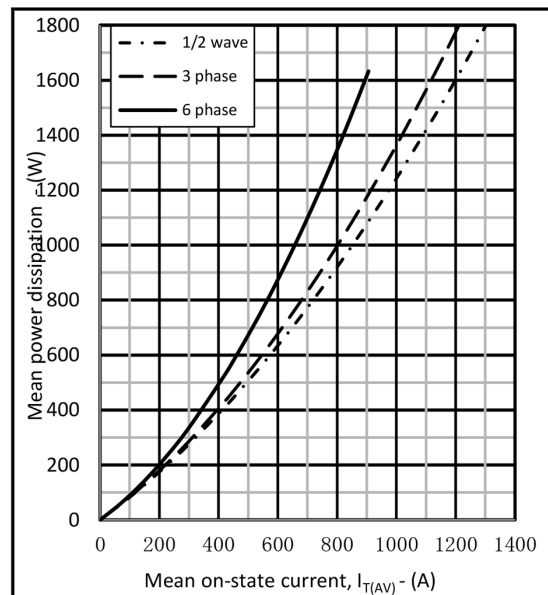


Fig.3 Dissipation curves

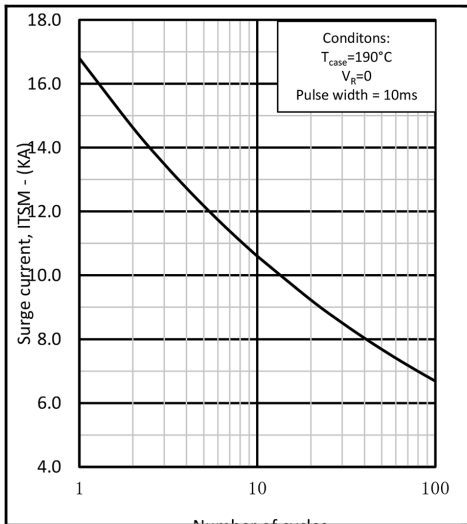


Fig.4 Surge (Non-Repetitive) Forward current vs time

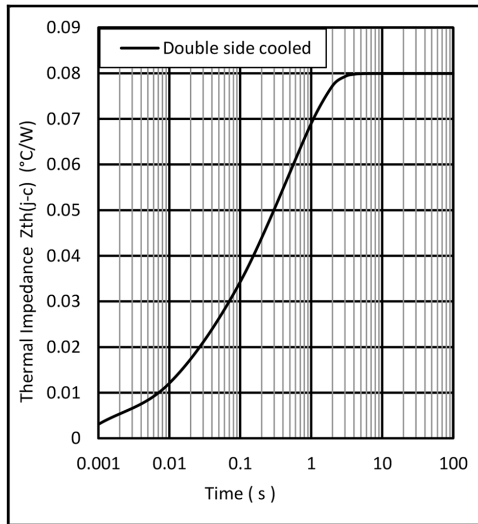
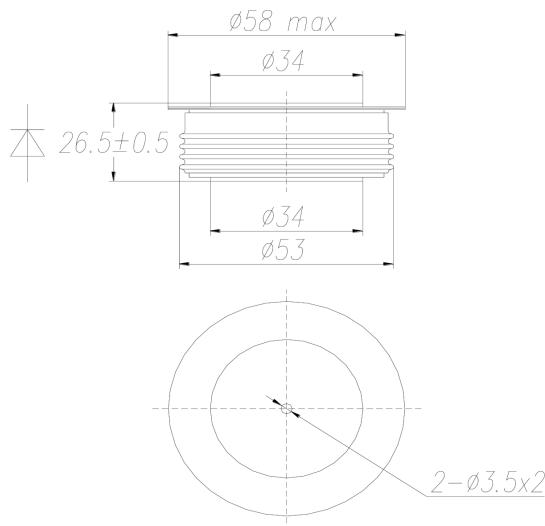


Fig.5 Maximum (limit) transient thermal impedance-junction to case



Part Number Table

Description	Part Number
Rectifier Diode Module, 1400V, 1500A, G Case Code	MPRD1510G14

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