

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Maximum allowable average forward current	A	515	$T_c=100\text{ }^\circ\text{C}$; 180° half-sine wave; 50 Hz	
I_{FRMS}	RMS forward current	A	808		
I_{FSM}	Surge forward current	kA	13.0 15.0	$T_j=T_{j\max}$ $T_j=25\text{ }^\circ\text{C}$	180° half-sine wave; $t_p=10\text{ ms}$; single pulse; $V_R=0\text{ V}$;
			14.0 16.0	$T_j=T_{j\max}$ $T_j=25\text{ }^\circ\text{C}$	180° half-sine wave; $t_p=8.3\text{ ms}$; single pulse; $V_R=0\text{ V}$;
I^2t	Safety factor	$A^2s\cdot 10^3$	840 1120	$T_j=T_{j\max}$ $T_j=25\text{ }^\circ\text{C}$	180° half-sine wave; $t_p=10\text{ ms}$; single pulse; $V_R=0\text{ V}$;
			810 1060	$T_j=T_{j\max}$ $T_j=25\text{ }^\circ\text{C}$	180° half-sine wave; $t_p=8.3\text{ ms}$; single pulse; $V_R=0\text{ V}$;
BLOCKING					
V_{RRM}	Repetitive peak reverse voltages	V	3000...3600	$T_{j\min} < T_j < T_{j\max}$; 180° half-sine wave; 50 Hz;	
V_{RSM}	Non-repetitive peak reverse voltages	V	3100...3700	$T_{j\min} < T_j < T_{j\max}$; 180° half-sine wave; single pulse;	
V_R	Reverse continuous voltages	V	$0.6\cdot V_{RRM}$	$T_j=T_{j\max}$;	
THERMAL					
T_{stg}	Storage temperature	$^\circ\text{C}$	-40...+50		
T_j	Operating junction temperature	$^\circ\text{C}$	-40...+150		
$T_{c\text{ op}}$	Operating temperature	$^\circ\text{C}$	-40...+125		
MECHANICAL					
a	Acceleration under vibration	m/s^2	50		

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions	
ON-STATE					
V_{FM}	Peak forward voltage, max	V	1.60	$T_j=25\text{ }^\circ\text{C}$; $I_{FM}=1256\text{ A}$	
$V_{F(TO)}$	Forward threshold voltage, max	V	0.80	$T_j=T_{j\max}$;	
r_T	Forward slope resistance, max	$m\Omega$	0.500	$0.5\pi I_{FAV} < I_T < 1.5\pi I_{FAV}$	
BLOCKING					
I_{RRM}	Repetitive peak reverse current, max	mA	50 3.00	$T_j=T_{j\max}$ $T_j=25\text{ }^\circ\text{C}$	$V_R=V_{RRM}$
THERMAL					
R_{thjc}	Thermal resistance, junction to case			180° half-sine wave, 50 Hz	
	per module	$^\circ\text{C/W}$	0.0325		
	per arm	$^\circ\text{C/W}$	0.0650		
	per module	$^\circ\text{C/W}$	0.0310	DC	
per arm	$^\circ\text{C/W}$	0.0620			
R_{thch}	Thermal resistance, case to heatsink				
	per module	$^\circ\text{C/W}$	0.0100		
	per arm	$^\circ\text{C/W}$	0.0200		
INSULATION					
V_{ISOL}	Insulation test voltage	kV	3.00	Sine wave, 50 Hz;	t=60 sec
			3.60	RMS	t=1 sec
MECHANICAL					
M_1	Mounting torque (M6) ¹⁾	Nm	6.00	Tolerance $\pm 15\%$	
M_2	Terminal connection torque (M10) ¹⁾	Nm	12.00	Tolerance $\pm 15\%$	
m	Weight, max	g	1500		

PART NUMBERING GUIDE	NOTES
<p>MD 3 - 515 - 36 - A2 - N 1 2 3 4 5 6</p> <p>1. MD - Rectifier Diode 2. Circuit Schematic: 3 – serial connection 4 – common Cathode 5 – common Anode 3. Average Forward Current, A 4. Voltage Code 5. Package Type (M.A2) 6. Ambient Conditions: N – Normal</p>	<p>¹⁾ The screws must be lubricated</p>