

FEATURES

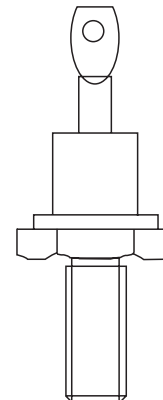
- 1). High surge current capability
- 2). Avalanche types available
- 3). Stud cathode and stud anode version
- 4). Wide current range
- 5). Types up to 1200V V_{RRM}

TYPICAL APPLICATIONS

- 1). Battery charges
- 2). Converters
- 3). Power supplies
- 4). Machine tool controls

MAJOR RATINGS AND CHARACTERISTICS

Parameters		12F(R)	Unit
$I_{F(AV)}$		12	A
	@ TC	144	°C
$I_{F(RMS)}$		19	A
	@ 50Hz	265	A
I_{FSM}	@ 60Hz	280	A
	@ 50Hz	351	A ² s
I^2t	@ 60Hz	320	A ² s
	range	100 to 1200	V
V_{RRM}	range	- 65 to 175	°C
T_J	range		



ELECTRICAL SPECIFICATIONS

1). Voltage Ratings

Type number	Voltage Code	V_{RRM} , maximum repetitive peak reverse voltage	V_{RSM} , maximum non-repetitive peak reverse voltage	$V_{R(BR)}$, minimum avalanche voltage ^{*(1)}	I_{RRM} max. @ $T_J = 175^\circ\text{C}$
		V	V	V	mA
12F(R)	10	100	150	--	12
	20	200	275	--	
	40	400	500	500	
	60	600	725	750	
	80	800	950	950	
	100	1000	1200	1150	
	120	1200	1400	1350	

^{*(1)} Avalanche version only available from V_{RRM} 400V to 1200V.

2). Forward Conduction

Parameters		12F(R)	Unit	Conditions		
$I_{F(AV)}$	Max. average forward current	12	A	180° conduction, half sine wave		
	@ Case temperature	144	°C			
$I_{F(RMS)}$	Max. RMS forward current	19	A			
P_R	Maximum non-repetitive peak reverse power	7	K/W	10 μs square pulse, $T_J = T_{J \text{ max.}}$ see note *(2)		
I_{FSM}	Max. peak, one-cycle forward, non-repetitive surge current	265	A	t = 10ms	No voltage	Sinusoidal half wave, Initial $T_J = T_{J \text{ max.}}$
		280		t = 8.3ms	reapplied	
		225		t = 10ms	100% V_{RRM}	
		235		t = 8.3ms	reapplied	
I^2t	Maximum I^2t for fusing	351	A^2s	t = 10ms	No voltage	
		320		t = 8.3ms	reapplied	
		250		t = 10ms	100% V_{RRM}	
		226		t = 8.3ms	reapplied	
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	3510	$A^2\sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied		
$V_{F(TO)1}$	Low level value of threshold voltage	0.77	V	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, $T_J = T_{J \text{ max.}}$		
$V_{F(TO)2}$	High level value of threshold voltage	0.97		$(I > \pi \times I_{F(AV)})$, $T_J = T_{J \text{ max.}}$		
r_{f1}	Low level value of forward slope resistance	10.70	mΩ	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, $T_J = T_{J \text{ max.}}$		
r_{f2}	High level value of forward slope resistance	6.20		$(I > \pi \times I_{F(AV)})$, $T_J = T_{J \text{ max.}}$		
V_{FM}	Max. forward voltage drop	1.26	V	$I_{pk} = 38A$, $T_J = 25^\circ C$, $t_p = 400 \mu s$ rectangular wave		
T_J	Max. junction operating temperature range	-65 to 175	°C			
T_{stg}	Max. storage temperature range	-65 to 200				
R_{thJC}	Max. thermal resistance, junction to case	2	K/W	DC operation		
R_{thCS}	Max. thermal resistance, case to heatsink	0.5	Nm	Mounting surface, smooth, flat and greased		
T	Mounting torque, ± 10%	1.2 (1.5)		Lubricated threads (Not lubricated threads)		
wt	Approximate weight	7 (0.25)	g (oz)			
	Case style	DO-4		See Outline Table		

*(2) Available only for Avalanche version, all other parameters the same as 12F.

3). ΔR_{thJC} Conduction

(The following table shows the increment of thermal resistance R_{thJC} when devices operate at different conduction angles than DC)

Conduction angle	Sinusoidal conduction	Rectangular conduction	Units	Conditions
180°	0.33	0.26	K/W	$T_J = T_{J \text{ max.}}$
120°	0.41	0.44		
90°	0.53	0.58		
60°	0.78	0.81		
30°	1.28	1.29		

PERFORMANCE CURVES FIGURE

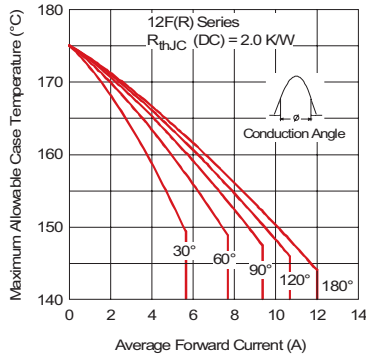


Fig. 1 - Current Ratings Characteristics

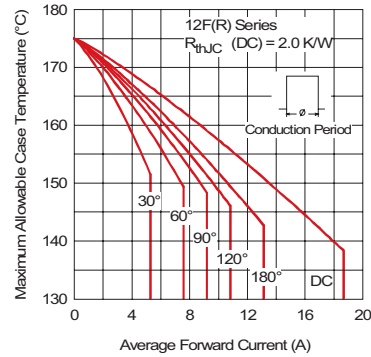


Fig. 2 - Current Ratings Characteristics

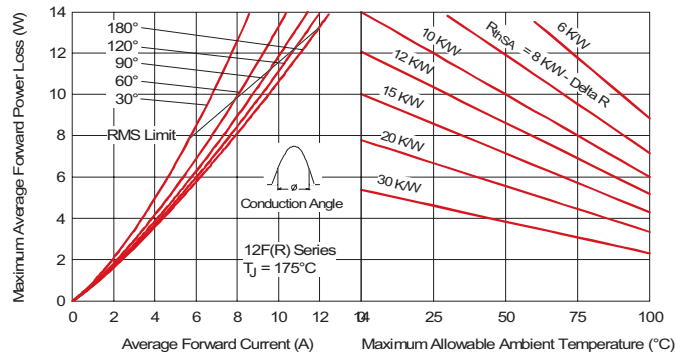


Fig. 3 - Forward Power Loss Characteristics

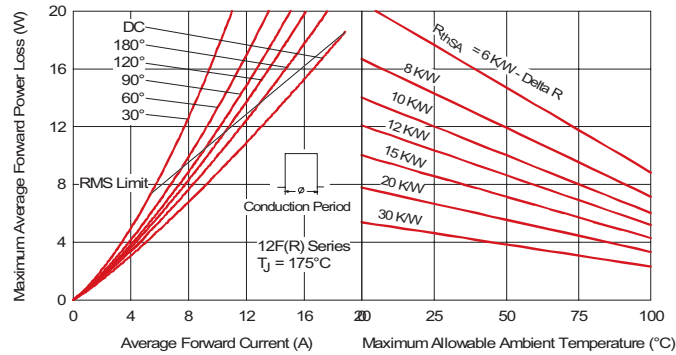


Fig. 4 - Forward Power Loss Characteristics

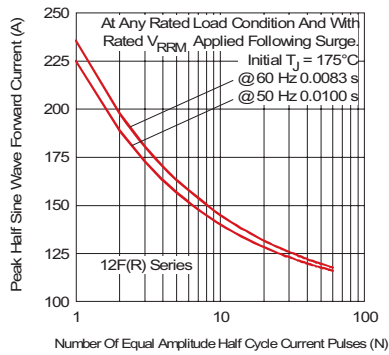


Fig. 5 - Maximum Non-Repetitive Surge Current

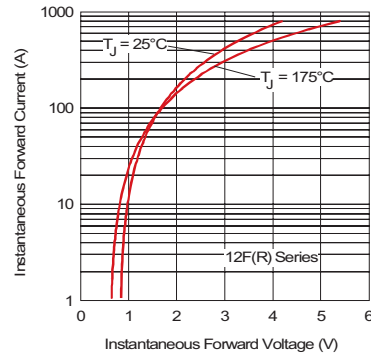


Fig. 7 - Forward Voltage Drop Characteristics

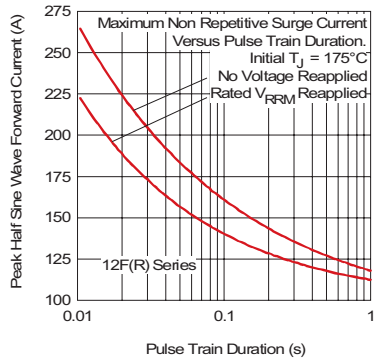


Fig. 6 - Maximum Non-Repetitive Surge Current

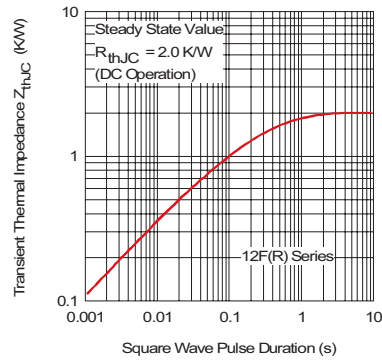
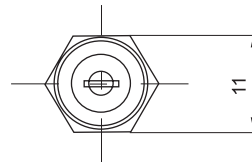
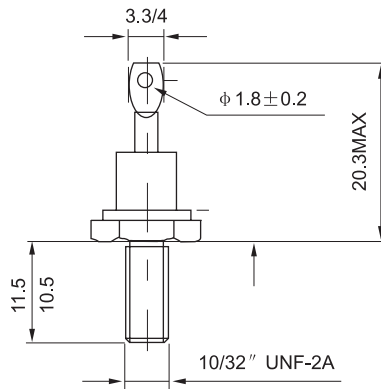


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics

OUTLINE



For metric devices: M5×0.8

Case Style DO-4

YUEQING LIUJING RECTIFIER CO., LTD

Sale Department: Liujing Building, Yueqing City, Zhejiang Province
 Add: Wanao Industrial Zone, Yueqing city, Zhejiang Province
 Tel: 0086-577-62519692 0089-577-62519693
 Fax: 0086-577-62518692
 International Export: 0086-577-62571902
 Technical Support: 0086-15868768965
 After Service: 400-6606-086
<http://www.china-liujing.com>
<http://www.liujingdianqi.cn>
<http://www.cnrectifier.com>
<http://www.cnthyristor.com.cn>
 MSN: thristors@hotmail.com

打造最具竞争力的电力半导体产品

To be the most competitive Power Semiconductor Devices manufactory.

LIUJING reserves the right to change limits, test conditions and dimensions.

윤정은 이 칼타로그 중에 데이트, 테스트 조건, 외형사이즈에 대한 최종 해석권을 가지고 있습니다.