

**STANDARD RECOVERY DIODES
 (Lead-Free)**

Stud Version

Features

- High surge current capability
- Very low V_F

105 A

Major Ratings and Characteristics

Parameters	105PF	Units
$I_{F(AV)}$	105	A
@ T_C	150	°C
$I_{F(RMS)}$	160	A
I_{FSM} @ 50Hz	2300	A
@ 60Hz	2400	A
I^2t @ 50Hz	23900	A ² s
@ 60Hz	26450	A ² s
V_{RRM} range	400	V
T_J range	- 40 to 180	°C



105PF40T

Final I2028 rev. D 01/05

International
IRF Rectifier**ELECTRICAL SPECIFICATIONS**

Voltage Ratings

Type number	Voltage Code	V_{RRM} maximum repetitive peak reverse voltage V	V_{RSM} maximum non-repetitive peak reverse voltage V	I_{RRM} max. @ $T_J = 150^\circ\text{C}$ mA
105PF	40	400	500	5

Forward Conduction

Parameter	105PF	Units	Conditions
$I_{F(AV)}$ Max. average forward current @ Case temperature	105	A	180° conduction, half sine wave
	150	°C	
	150	A	
	135	°C	
$I_{F(RMS)}$ Max. RMS forward current	160	A	
I_{FSM} Max. peak, one-cycle forward, non-repetitive surge current	2300	A	t = 10ms No voltage
	2400		t = 8.3ms reapplied
	1970		t = 10ms 100% V_{RRM}
	2050		t = 8.3ms reapplied
I^2t Maximum I^2t for fusing	26450	A ² s	t = 10ms No voltage
	23900		t = 8.3ms reapplied
	19400		t = 10ms 100% V_{RRM}
	17440		t = 8.3ms reapplied
$I^2\sqrt{t}$ Maximum $I^2\sqrt{t}$ for fusing	200	ka ² √s	t = 0.1 to 10ms, no voltage reapplied
$V_{F(TO)}$ Value of threshold voltage	0.75	V	$T_J = T_J$ max.
r_f Value of forward slope resistance	1.0	mΩ	$T_J = T_J$ max.
V_{FM} Max. forward voltage drop	1.05	V	$V_{Ipk} = 200\text{A}$, $T_J = 25^\circ\text{C}$, $t_p = 400\mu\text{s}$ rectangular wave

Thermal and Mechanical Specifications

Parameter	105PF	Units	Conditions
T_J Max. junction operating temperature range	-40 to 180	°C	
T_{stg} Max. storage temperature range	-40 to 180		
R_{thJC} Max. thermal resistance, junction to case	0.25	°C/W	AC operation
R_{thCS} Max. thermal resistance, case to heatsink	0.25		Mounting surface, smooth, flat and greased
T Allowable mounting torque (1) As general recommendation we suggest to tight on hexagon and not on nut (2) Torque must be applicable only to hexagon and not to plastic structure	2.8	N m	Top thread; using bus-bar or plate, only.
	25	lbf · in	Avoid silicone grease on thread
	3.4 ^{+0-10%}	N m	Bottom base; tightening on nut (1)
	30	lbf · in	Not lubricated threads
	2.3 ^{+0-10%}	N m	Bottom base; tightening on hexagon (2)
	20	lbf · in	Lubricated threads
wt Approximate weight	17 (0.6)	g (oz)	unleaded device
Case style	DO-203AB (DO5)		See Outline Table

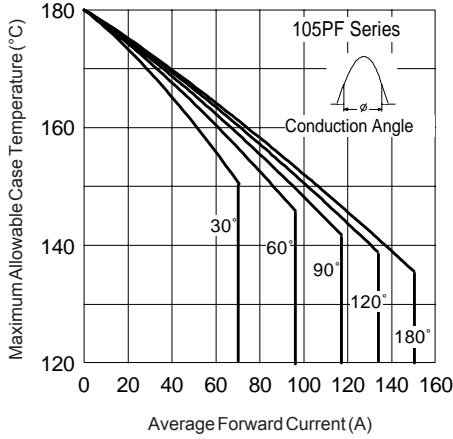


Fig. 1 - Current Ratings Characteristics

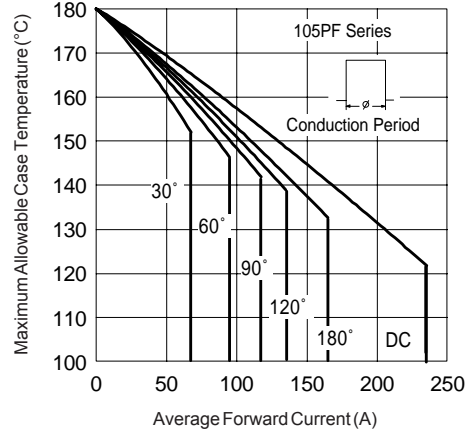


Fig. 2 - Current Ratings Characteristics

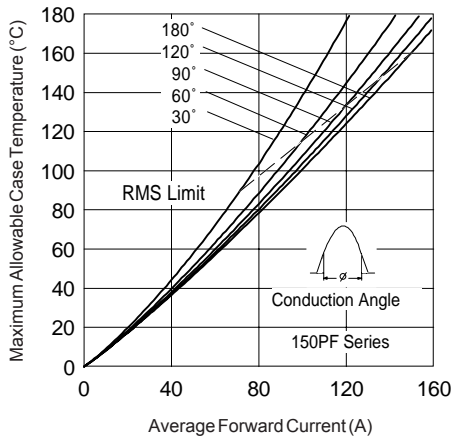


Fig. 3 - Current Ratings Characteristics

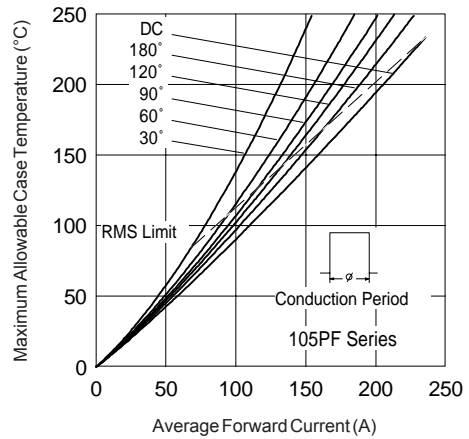


Fig. 4 - Current Ratings Characteristics

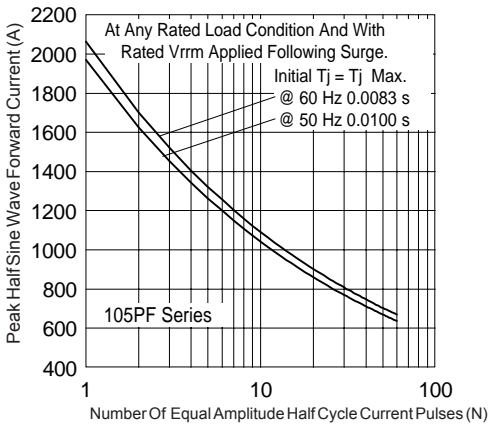


Fig. 5 - Maximum Non-Repetitive Surge Current

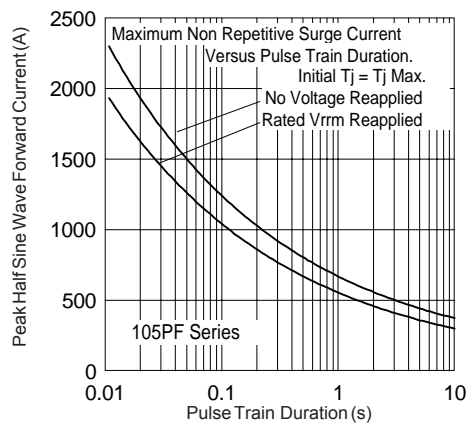


Fig. 6 - Maximum Non-Repetitive Surge Current

105PF40T

Final I2028 rev. D 01/05

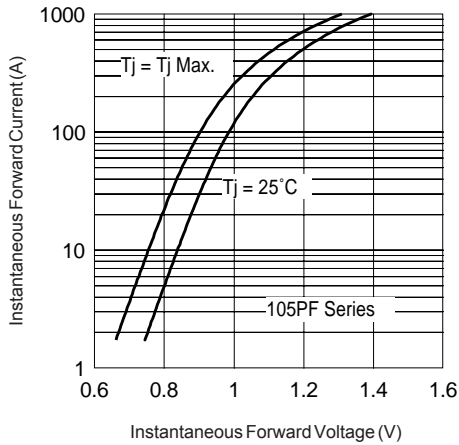


Fig. 7 - Forward Voltage Drop Characteristics

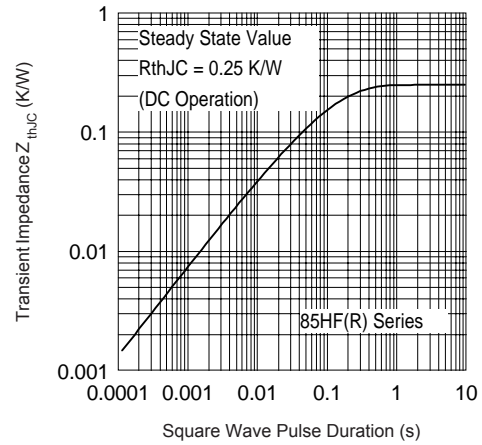
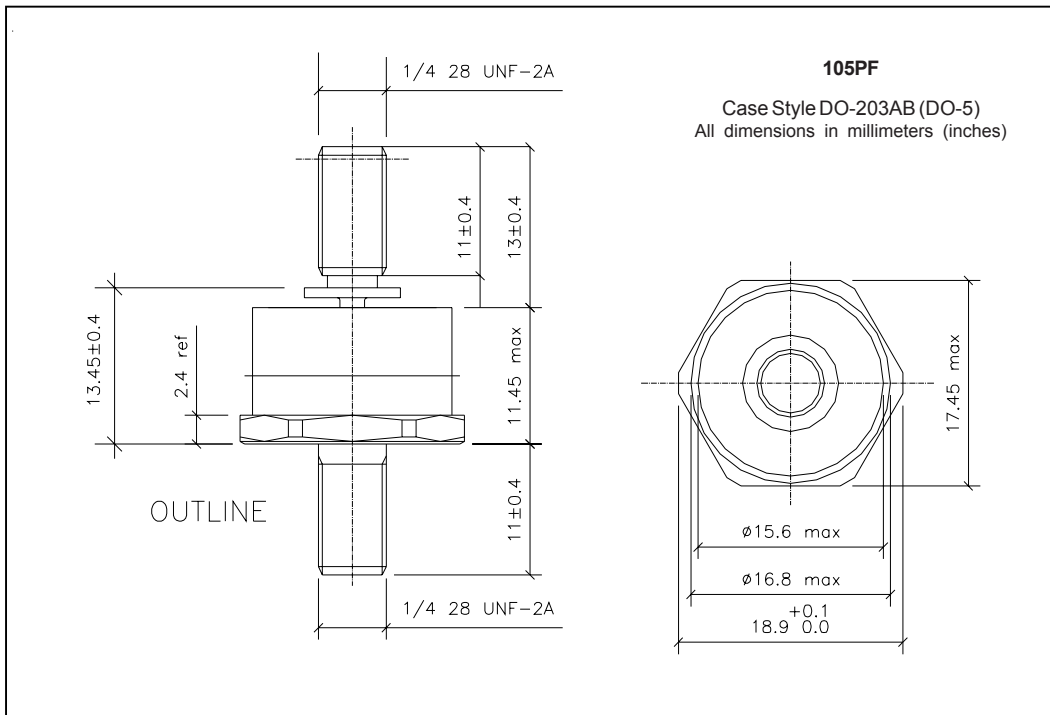


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics

Outline Table



Ordering Information Table

Device Code			
105	PF	40	T
①	②	③	④
1	-	Current Rating (105 = 105A)	
2	-	PF = Plastic Package	
3	-	Voltage Rating (40 = 400V)	
4	-	T = Top Thread	

Data and specifications subject to change without notice.
This product has been designed and qualified for Industrial Level and Lead-Free.
Qualification Standards can be found on IR's Web site.