



# 85HFL SERIES

100 - 1000 Volts, 85 Amps  
FAST RECOVERY RECTIFIER

### Features:

- Short reverse recovery time
- Low stored charge
- Wide current range
- Excellent surge capabilities
- Stud cathode and stud anode versions



PICTURE IS FOR REFERENCE ONLY

### ELECTRICAL CHARACTERISTICS AND RATINGS

PARAMETER	SYMBOL	VALUE	UNITS
Max. Average forward current @ 75 °C	$I_{F(AV)}$	85	A
Max. peak one cycle (non-rep) surge current 10 msec	$I_{FSM}$ 50 Hz	1100	A
	$I_{FSM}$ 60 Hz	1151	
Max $I^2t$ for fusing	$I^2t$ 50Hz	6050	A <sup>2</sup> S
	$I^2t$ 60Hz	5523	
Max $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	85560	$I^2\sqrt{s}$
Trr range	$T_{RR}$	See table	ns
Vrrm range	$V_{RRM}$	100 to 1000	V
TJ range	TJ	-40 to 125	°C

PART NUMBER	$V_{RRM}$ Max. Peak Repetitive Reverse Voltage TJ = -40 to 125°C V	$V_{RSM}$ Max. Peak Non-repetitive reverse Voltage TJ = -40 to 125°C V	$I_{FM}$ / Max.peak reverse current at rated VRRM	
			T <sub>J</sub> = 25°C mA	T <sub>J</sub> = 125°C mA
85HFL*10S02, 85HFL*10S05, 85HFL*10S10	100	150	0.1	20
85HFL*20S02, 85HFL*20S05, 85HFL*20S10	200	300		
85HFL*40S02, 85HFL*40S05, 85HFL*40S10	400	500		
85HFL*60S02, 85HFL*60S05, 85HFL*60S10	600	700		
85HFL*80S02, 85HFL*80S05, 85HFL*80S10	800	900		
85HFL*100S02, 85HFL*100S05, 85HFL*100S10	1000	1100		



**REVERSE RECOVERY CHARACTERISTICS**

PARAMETER	SYMBOL	VALUE			UNITS	CONDITIONS
Max. Reverse Recovery time	T <sub>RR</sub>	S02	S05	S10	ns	T <sub>J</sub> =25C , IF=1A,to Vr=30V, - dif/dt = 100 A/us
		50	120	270		
		200	500	1000	ns	T <sub>J</sub> =25C, - dif/dt = 25 A/us IFM = π x rated I <sub>F(AV)</sub>
Max. Reverse Recovered charge	Q <sub>RR</sub>	S02	S05	S10	nc	T <sub>J</sub> =25C , IF=1A,to Vr=30V, - dif/dt = 100 A/us
		70	340	1350		
		240	1300	6000	nc	T <sub>J</sub> =25C, - dif/dt = 25 A/us IFM = π x rated I <sub>F(AV)</sub>

**FORWAR CONDUCTION**

Parameter	Symbol	Value	Units	Conditions	
Max. average forward current @75°C	I <sub>F(AV)</sub>	85	A	180°C conduction, half sine wave	
Max. RMS forward current	I <sub>F(RMS)</sub>	134	A		
Max. Peak repetitive forward current	I <sub>FRM</sub>	470		Sinusoidal half-wave 30° conduction	
Max. peak one cycle non-repetitive forward current	I <sub>FSM</sub>	1100	A	t=10ms	Sinusoidal half-wave 100% VRRM Reapplied initial T <sub>J</sub> = T <sub>J</sub> max.
		1308			Sinusoidal half-wave No voltage Reapplied initial T <sub>J</sub> = T <sub>J</sub> max
Max. I <sup>2</sup> t for fusing	I <sup>2</sup> t	6050	A <sup>2</sup> s	t=10ms	100% VRRM Reapplied initial T <sub>J</sub> = T <sub>J</sub> max
		8556			No voltage Reapplied initial T <sub>J</sub> = T <sub>J</sub> max
Max. I <sup>2</sup> √t for fusing (1)	I <sup>2</sup> √t	85560	A <sup>2</sup> s	t= 0.1 to 10ms. No voltage reapplied	
Max value of threshold voltage	V <sub>F(TO)</sub>	1.128	V	T <sub>J</sub> = 125°C.	
Low level value of forward slope resistance	r <sub>F</sub>	2.11	mΩ		
Max. peak forward voltage	V <sub>FM</sub>	1.75	V	T <sub>J</sub> = 25°C, IFM = π x I <sub>F(AV)</sub>	

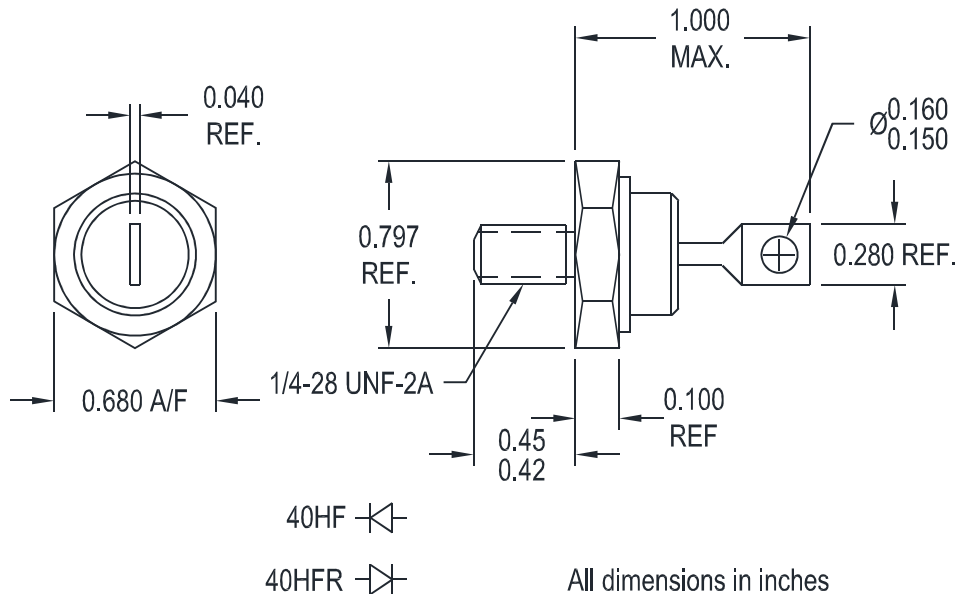
1. I<sup>2</sup>t for time tx = I<sup>2</sup>√t \* √x



**THERMAL MECHANICAL SPECIFICATIONS**

PARAMETER		SYMBOL	VALUE	UNITS	CONDITIONS
Junction Operating temperature range		T <sub>J</sub>	-40 to 125	°C	
Storage temperature range		T <sub>STG</sub>	-40 to 150	°C	
Max. internal Thermal resistance junction to case		RthJC	0.30	KW	DC Operation
Max thermal resistance case to heatsink		RthCS	0.25	KW	Mounting surface smooth, flat & greased
Mounting torque 10%	To nut	T	20 (27)	Lbf. in	Lubricated threads (non-lubricated threads)
			0.23 (0.29)	Kgf.m	
			2.2 (2.7)	n.m	
	To device		22	Lbf. in	
			0.25	Kgf.m	
			2.5	n.m	
Approx. Weight		Wt	25 (0.88)	G (oz)	
Outline			(D0-5)		

**OUTLINE AND DIMENSIONS**



85	HFL	R	100
1	2	3	4

- 1 – 85 = Series Device
- 2 – HFL = Fast Recovery Diode
- 3 – None = Normal Polarity  
R = Reverse Polarity
- 4 – Voltage Code x 10 = V<sub>RRM</sub>