



70HFL SERIES

100 V – 1000 V, 70 Amp
Fast Recovery Diode

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 | $I_{F(AV)}$ | 70 | A |
| Max. peak one cycle (non-rep) surge current 10 msec | I_{FSM} 50 Hz | 700 | A |
| | I_{FSM} 60 Hz | 730 | |
| Max I^2t for fusing | I^2t 50Hz | 2450 | A^2s |
| | I^2t 60Hz | 2240 | |
| Max $I^2\sqrt{t}$ for fusing | $I^2\sqrt{t}$ | 34,650 | $I^2\sqrt{s}$ |
| Trr range | Trr | See table | V |
| Vrrm range | Vrrm | 100 to 1000 | ns |
| 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 | |
|--|--|--|---|------------------|
| | | | Tj = 25°C mA | Tj = 125°C mA |
| 70HFL*10S02, 70HFL*10S05, 70HFL*10S10 | 100 | 150 | 0.1 | 15 |
| 70HFL*20S02, 70HFL*20S05, 70HFL*20S10 | 200 | 300 | | |
| 70HFL*40S02, 70HFL*40S05, 70HFL*40S10 | 400 | 500 | | |
| 70HFL*60S02, 70HFL*60S05, 70HFL*60S10 | 600 | 700 | | |
| 70HFL*80S02, 70HFL*80S05, 70HFL*80S10 | 800 | 900 | | |
| 70HFL*100S02, 70HFL*100S05, 70HFL*100S10 | 1000 | 1100 | | |



REVERSE RECOVERY CHARACTERISTICS

| PARAMETER | SYMBOL | VALUE | | | UNITS | CONDITIONS |
|-------------------------------|-----------------|-------|------|------|-------|--|
| Max. Reverse Recovery time | T _{RR} | S02 | S05 | S10 | ns | T _J =25C, I _F =1A, to V _r =30V, -dif/dt = 100 A/us |
| | | 60 | 150 | 290 | | |
| | | 200 | 500 | 1000 | ns | T _J =25C, -dif/dt = 25 A/us IFM = π x rated I _{F(AV)} |
| Max. Reverse Recovered charge | Q _{RR} | S02 | S05 | S10 | nc | T _J =25C, I _F =1A, to V _r =30V, -dif/dt = 100 A/us |
| | | 90 | 500 | 1600 | | |
| | | 240 | 1300 | 6000 | nc | T _J =25C, -dif/dt = 25 A/us IFM = π x rated I _{F(AV)} |

FORWAR CONDUCTION

| Parameter | Symbol | Value | Units | Conditions | |
|--|---------------------|-------|------------------|---|--|
| Max. average forward current @75°C | I _{F(AV)} | 70 | A | 180°C conduction, half sine wave | |
| Max. RMS forward current | I _{F(RMS)} | 110 | A | Sinusoidal half-wave 30° conduction | |
| Max. Peak repetitive forward current | I _{FRM} | 380 | | | |
| Max. peak one cycle non-repetitive forward current | I _{FSM} | 700 | A | t=10ms | Sinusoidal half-wave 100% VRRM Reapplied initial T _J = T _J max. |
| | | 830 | | | Sinusoidal half-wave No voltage Reapplied initial T _J = T _J max |
| Max. I ² t for fusing | I ² t | 2450 | A ² s | t=10ms | 100% VRRM Reapplied initial T _J = T _J max |
| | | 3460 | | | No voltage Reapplied initial T _J = T _J max |
| Max. I ² √t for fusing note 1 | I ² √t | 34650 | A ² s | t= 0.1 to 10ms. No voltage reapplied | |
| Max value of threshold voltage | V _{F(TO)} | 1.085 | V | T _J = 125°C. | |
| Low level value of forward slope resistance | r _F | 3.40 | mΩ | | |
| Max. peak forward voltage | V _{FM} | 1.85 | V | T _J = 25°C, IFM = π x I _{F(AV)} | |

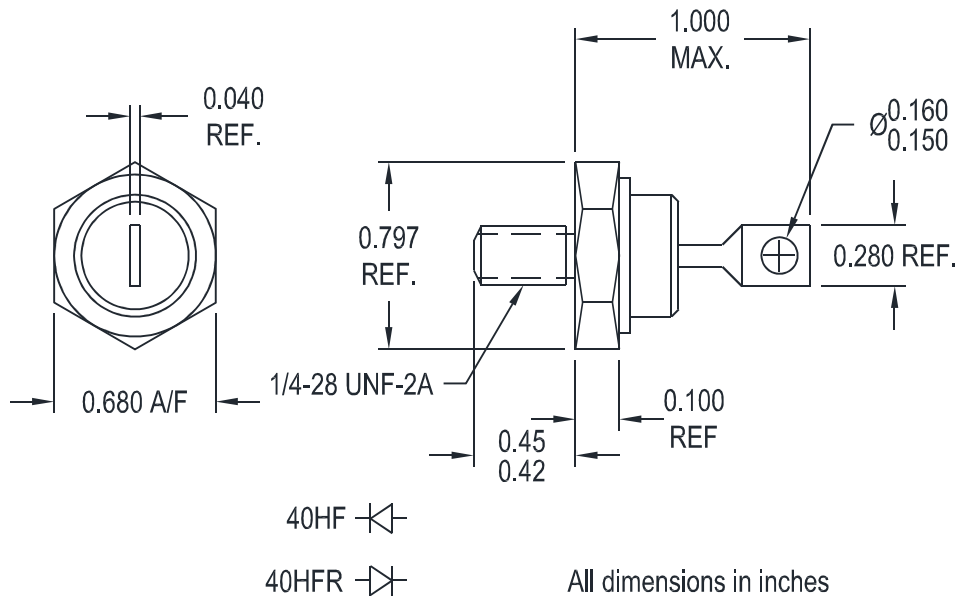
1. I²t for time t_x = I²√t * √x



THERMAL AND MECHANICAL SPECIFICATIONS

| PARAMETER | | SYMBOL | VALUE | UNITS | CONDITIONS |
|---|-----------|-------------------|-------------|---------|---|
| Junction Operating temperature range | | T _J | -40 to 125 | °C | |
| Storage temperature range | | T _{STG} | -40 to 150 | °C | |
| Max. internal Thermal resistance junction to case | | R _{thJC} | 0.36 | KW | DC Operation |
| Max thermal resistance case to heatsink | | R _{thCS} | 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 outline | | Wt | 25 (0.88) | G (oz) | |
| | | | (D0-5) | | |

OUTLINE AND DIMENSIONS



| | | | |
|----|-----|---|-----|
| 70 | HFL | R | 100 |
| 1 | 2 | 3 | 4 |

- 1 - 70 = Series Device
- 2 - HFL = Fast Recovery Diode
- 3 - None = Normal Polarity
- R = Reverse Polarity
- 4 - Voltage Code x 10 = V_{RRM}