

# GDF15U60/GD15U60

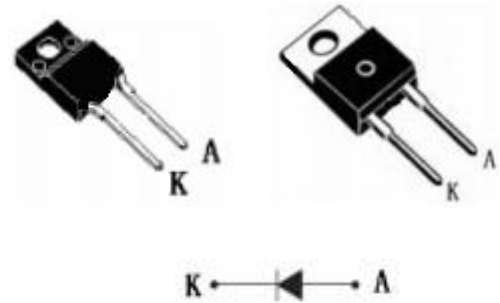
## Ultra-Fast Recovery Rectifiers

### General Description and Features

- Low forward voltage drop
- Ultra-fast recovery time
- Soft recovery characteristics
- Low leakage current
- Planar construction
- RoHS compliant
- Matte Tin(Sn) lead finish
- Pb-free package is available
- Terminal leads surface is corrosion resistant and can withstand to 260°C
- Wave soldering or per MIL-STD-750 method 2026

### ULTRA-FAST RECOVERY RECTIFIERS

CURRENT 15A VOLTAGE 600V



### Absolute Maximum Rating (Ta=25°C unless otherwise specified)

Symbol	Parameter	Value	Unit
V <sub>RRM</sub>	Maximum Repetitive Reverse Voltage	600	V
V <sub>DC</sub>	Maximum DC Blocking Voltage		V
I <sub>F(AV)</sub>	Average Rectified Forward Current, T <sub>C</sub> =100°C	15	A
I <sub>FSM</sub>	Peak Forward Surge Current, 8.3mS, Half Sine wave	150	A
T <sub>j</sub>	Operating Junction Temperature	175	°C
T <sub>STG</sub>	Storage Temperature Range	-55 to +150	°C

### Thermal Characteristics (Ta = 25°C unless otherwise specified)

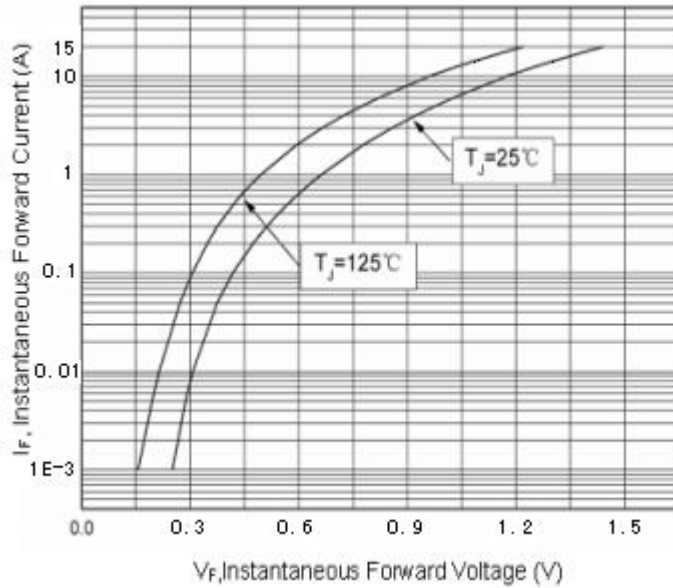
Symbol	Parameter	Max	Unit
R <sub>θJC</sub>	Thermal Resistance, Junction to Case	TO-220-2L	2.5
		TO-220F-2L	3.0

### Electrical Characteristics (Ta= 25°C)

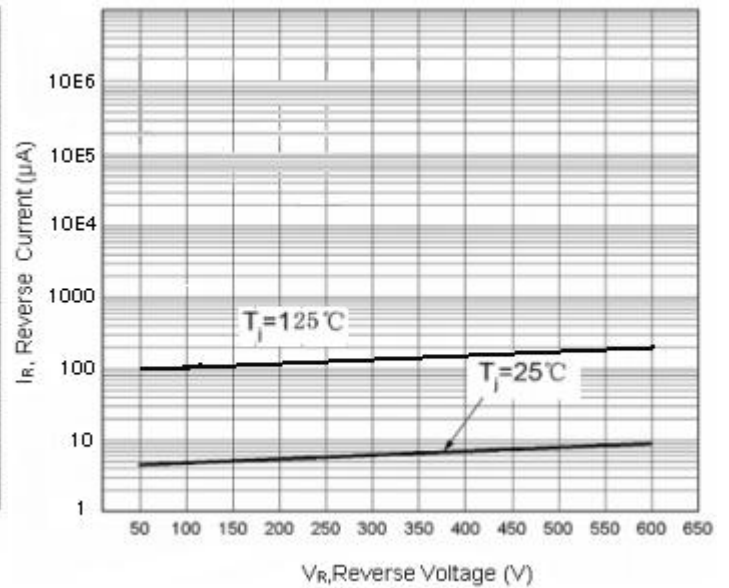
Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V <sub>R</sub>	Reverse Breakdown Voltage	I <sub>R</sub> =50μA	600		670	V
I <sub>R</sub>	Reverse Current	V <sub>R</sub> = 600V, Ta = 25°C			10	uA
		V <sub>R</sub> = 600V, Ta = 125°C			100	uA
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> = 15A, Ta = 25°C		1.30	1.55	V
		I <sub>F</sub> = 15A, Ta = 125°C		1.20	1.45	V
T <sub>rr</sub>	Recovery time	I <sub>F</sub> = 1A, V <sub>R</sub> =30V, di/dt=-200A/μs		25		ns
		I <sub>F</sub> = 0.5A, I <sub>R</sub> =1A, I <sub>rr</sub> =0.25A		26	35	ns



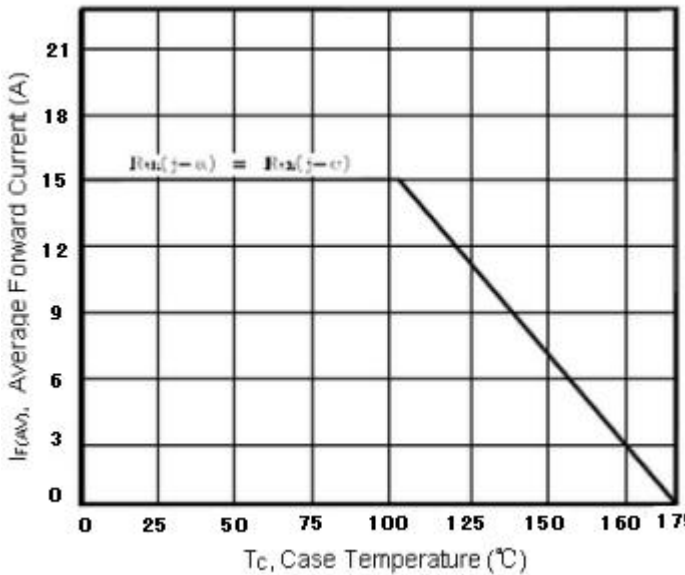
**Characteristics Curves**



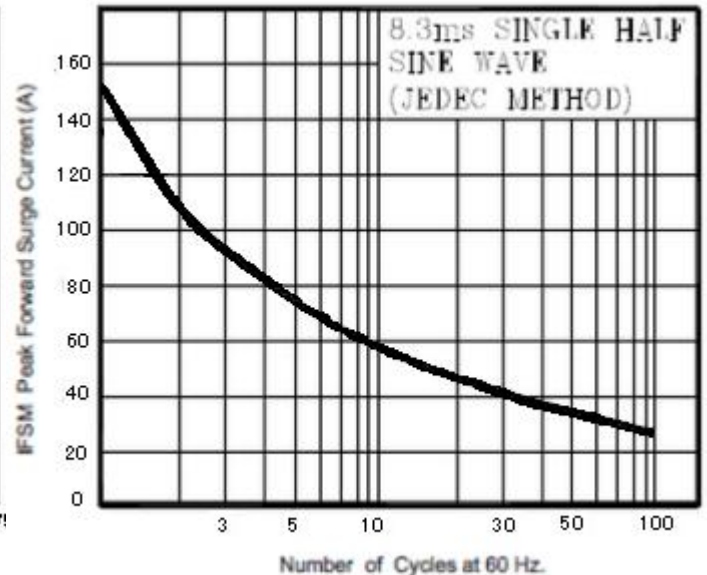
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



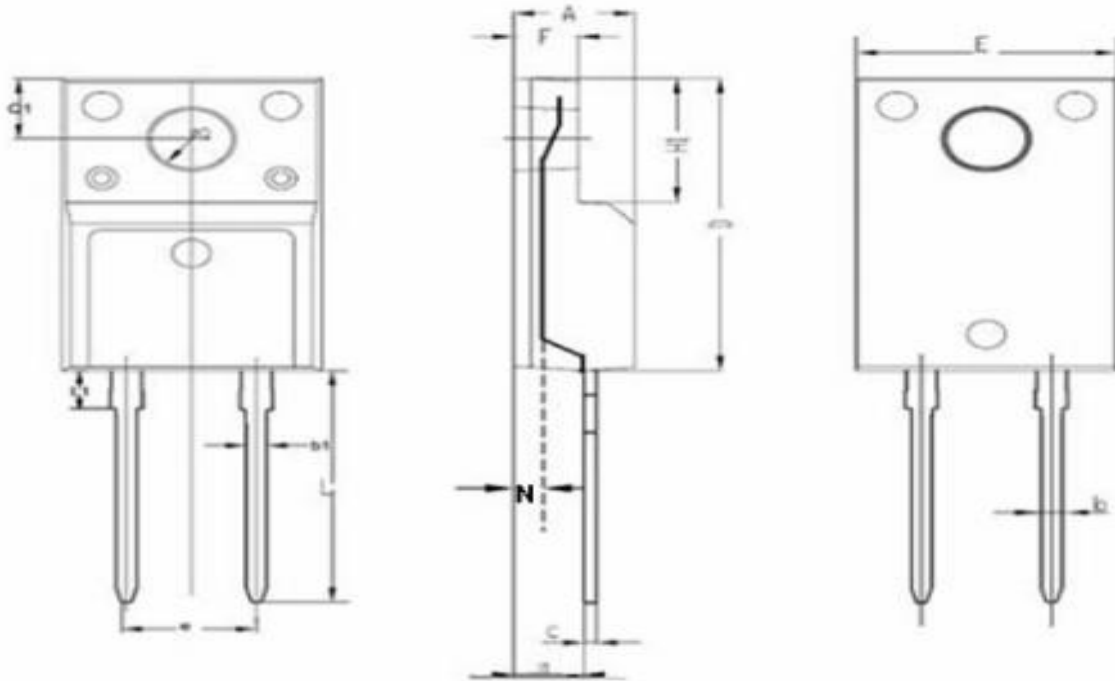
**Forward Current Derating Curve**



**Maximum Non-Repetitive Peak Forward Surge Current**



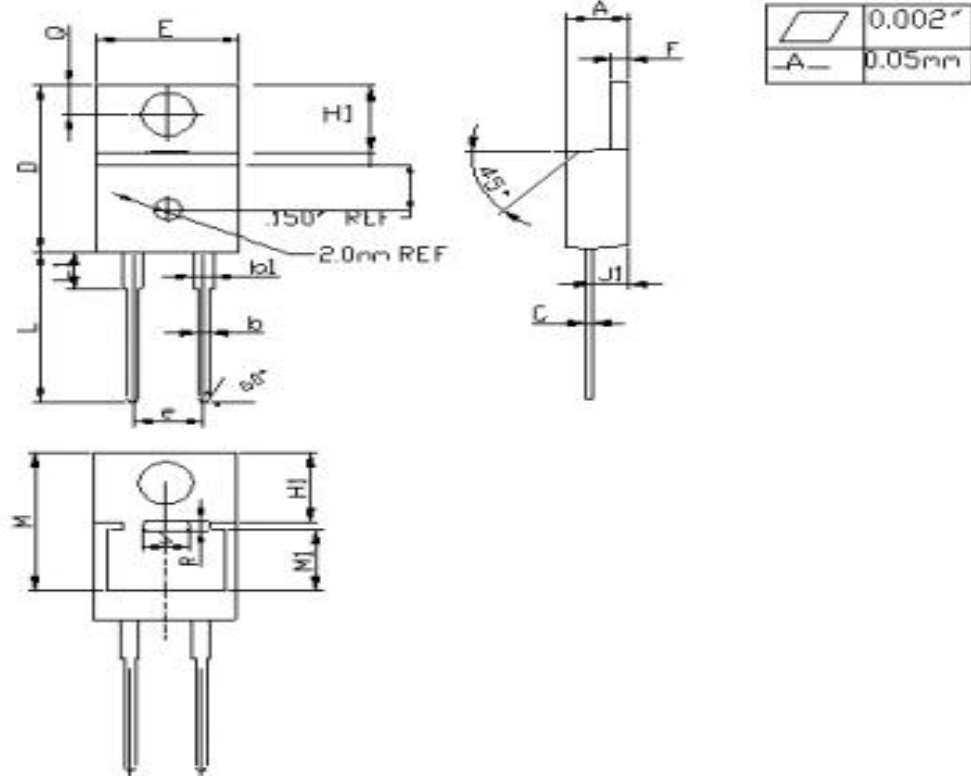
TO-220F-2L POD



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.178	0.194	4.53	4.93
b	0.028	0.036	0.71	0.91
C	0.018	0.024	0.45	0.60
D	0.617	0.633	15.67	16.07
E	0.274	0.408	6.96	10.36
e	0.200 TYP.		5.08 TYP.	
H1	0.256	0.272	6.50	6.90
J1	0.101	0.117	2.56	2.96
L	0.487	0.503	12.37	12.77
$\phi$ Q	0.117	0.133	2.98	3.38
b1	0.045	0.055	1.15	1.39
L1	0.074	0.090	1.90	2.30
Q1	0.122	0.138	3.10	3.50
F	0.092	0.108	2.34	2.74
N	0.016	0.024	0.4	0.6



TO-220-2L POD



SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	0.170	0.180	4.31	4.57	
b1	0.045	0.055	1.14	1.40	
b	0.028	0.036	0.71	0.91	
c	0.016	0.025	0.41	0.63	
D	0.590	0.610	14.97	15.48	
E	0.390	0.410	9.90	10.41	
e	0.200BSC		5.08BSC		
F	0.046	0.054	1.17	1.37	
H1	0.230	0.260	5.84	6.60	
J1	0.100	0.110	2.54	2.79	
L	0.530	0.550	13.45	13.96	
L1	0.130	0.150	3.30	3.81	
P	0.147	0.154	3.73	3.91	
Q	0.102	0.112	2.59	2.84	
M	0.470	0.500	11.93	12.69	
M1	0.180	0.230	4.57	5.84	
R	0.036	0.045	0.91	1.14	
S	0.123	0.132	3.12	3.35	