

**Features**

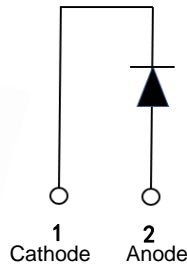
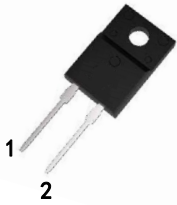
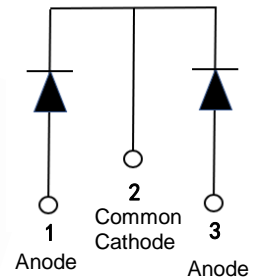
- Low Leakage Current
- Low Forward Voltage Drop
- High Surge Capacity
- Soft, Fast Switch
- High Junction Temperature Capability

Product Summary

V_R	200V
I_F	10A (Per Leg)
T_J	150°C
V_F	0.80V @10A (Typ.)

Applications

- AC-DC power adapter
- Rectifier, Convert

**TO-220F-2L Package****TO-220F-3L Package****Package Marking and Ordering Information**

Part #	Marking	Package	Packing	Qty
FSD20S10ETL	D20S10L	TO-220F-2L	Tube	50
FSD20S20FTDL	D20S20DL	TO-220F-3L	Tube	50

Maximum Ratings (Per Leg) @TA=25°C unless otherwise specified

Symbol	Parameter	Values	Units
V_{RRM}	Peak Repetitive Reverse Voltage	200	V
V_{RWM}	Working Peak Reverse Voltage		
V_{RM}	DC Blocking Voltage		
$I_{F(AV)}$	Average Rectified Forward Current Per Leg (Rate V_R) $T_C=150^\circ\text{C}$ Per Package	10	A
I_{FSM}	Non-repetitive Peak Surge Current (8.3ms, half sine wave)	300	A
I_{RRM}	Peak Repetitive Reverse Surge Current (2.0 μs , 1.0kHz)	2.5	A
T_J	Operating Junction Temperature Range	-55 to +150	°C
T_{stg}	Storage Temperature	-55 to +150	°C

**Thermal characteristics (Per Leg)**

Symbol	Parameter	Values			Unit
		Min.	Typ.	Max.	
R_{thJC}	Thermal resistance, Junction-case	-	-	0.84	°C/W
R_{thJA}	Thermal resistance, Junction-ambient(min. footprint)	-	-	65	°C/W

Electrical Characteristics (Per Leg) @ $T_J = 25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_F	Diode forward voltage	$I_F=5\text{A}, T_J=25^\circ\text{C}$	-	0.75	0.83	V
		$I_F=5\text{A}, T_J=150^\circ\text{C}$	-	0.59	0.69	
		$I_F=10\text{A}, T_J=25^\circ\text{C}$	-	0.80	0.85	
		$I_F=10\text{A}, T_J=150^\circ\text{C}$	-	0.65	0.75	
I_R	Reverse current	$V_R=200\text{V}, T_J=25^\circ\text{C}$	-	-	3	μA
		$V_R=200\text{V}, T_J=150^\circ\text{C}$	-	-	1	mA
T_{rr}	Reverse Recovery Time	$V_R=30\text{V}, I_F=1\text{A},$ $di/dt=100\text{A}/\mu\text{S}, T_J=25^\circ\text{C}$	-	22	-	nS
Q_{rr}	Reverse Recovery Charge		-	21	-	μC



Typical Performance Characteristics (Per Leg)

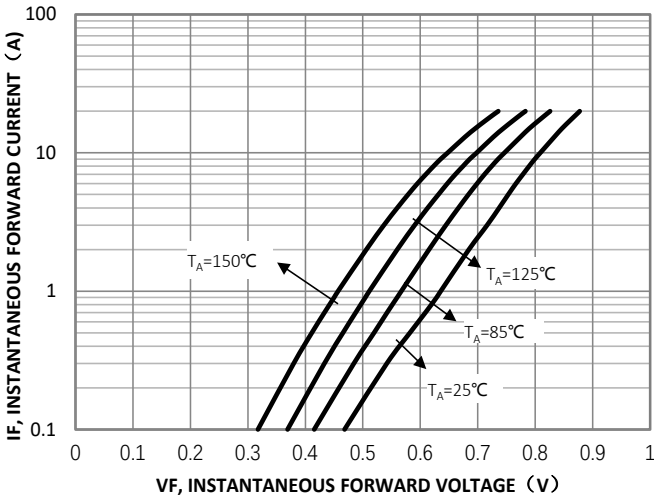


Fig1. Typical Forward Characteristics

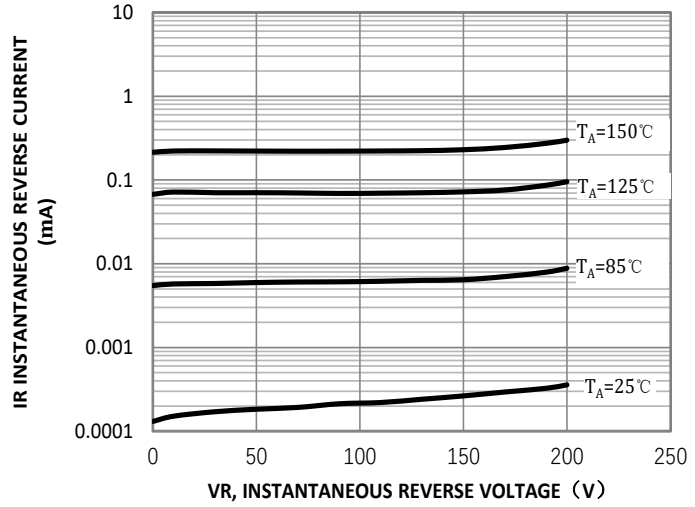


Fig2. Typical Reverse Characteristics

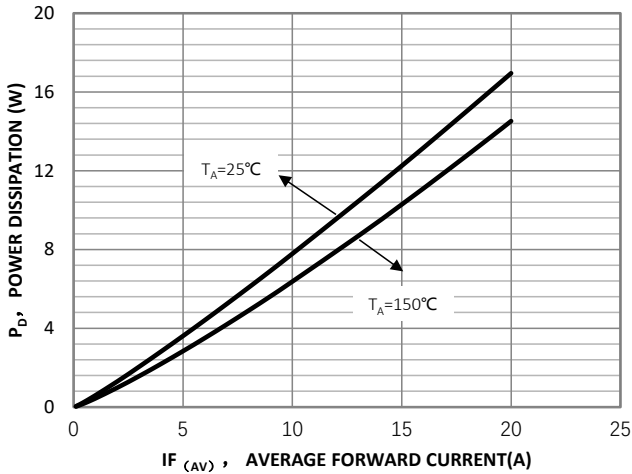


Fig3. Typical Power Dissipation

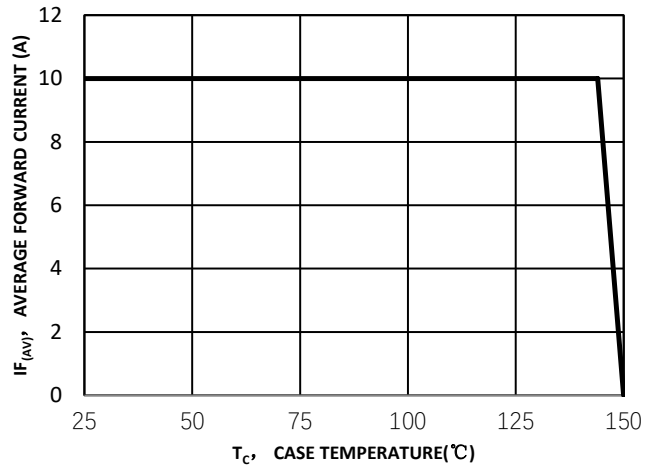
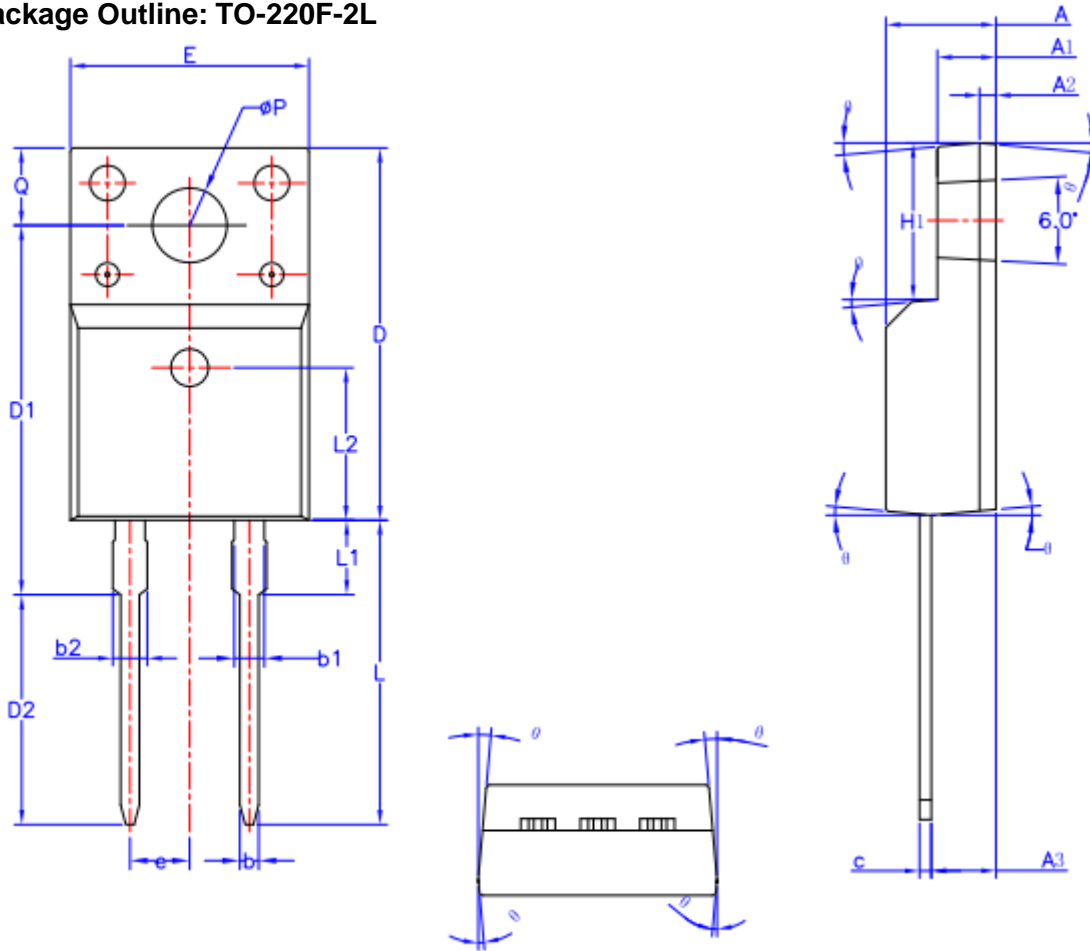
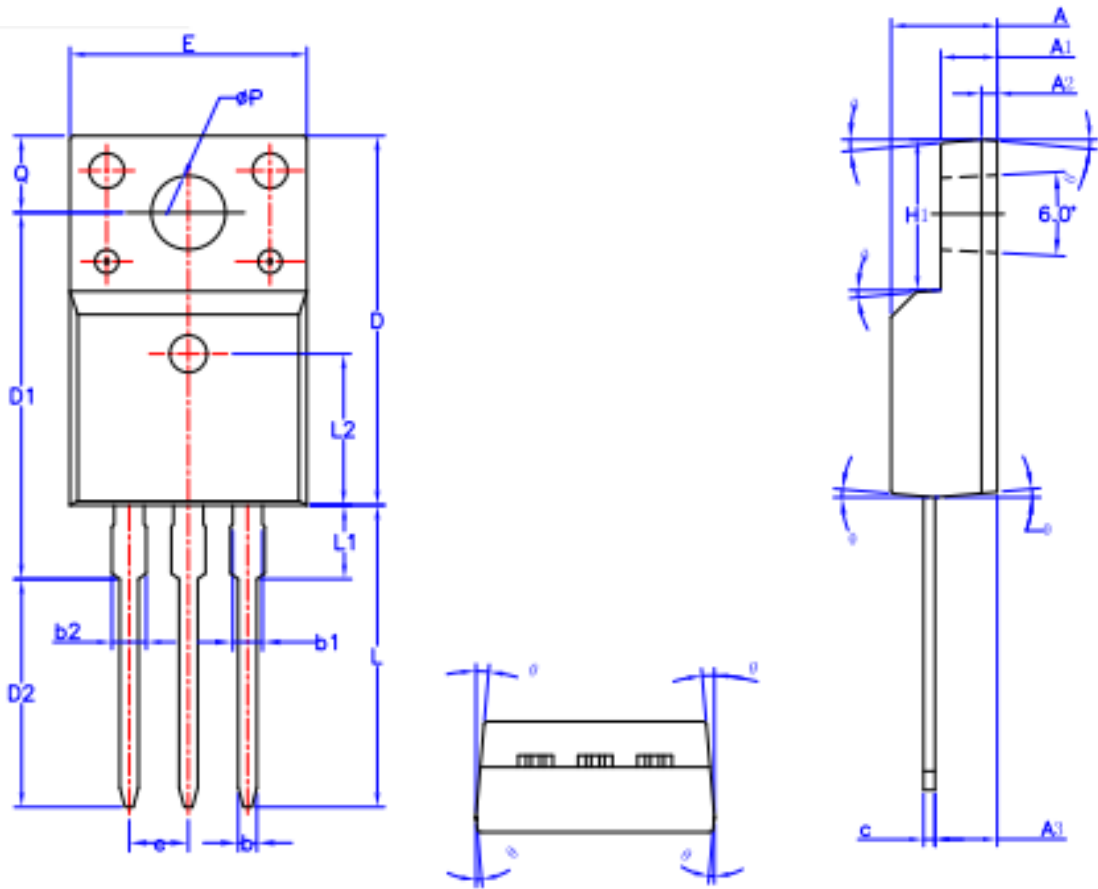


Fig4. Forward Current Derating Curve

Package Outline: TO-220F-2L


SYMBOL	MIN	NOM	MAX
A	4.50	4.70	4.90
A1	2.34	2.54	2.74
A2	0.70 REF		
A3	2.56	2.76	2.96
b	0.70	-	0.90
b1	1.18	-	1.38
b2	-	-	1.47
c	0.45	0.50	0.60
D	15.67	15.87	16.07
D1	15.55	15.75	15.95
D2	9.60	9.80	10.00
E	9.96	10.16	10.36
e	2.54BSC		
H1	6.48	6.68	6.88
L	12.68	12.98	13.28
L1	-	-	3.50
L2	6.50REF		
ϕP	3.08	3.18	3.28
Q	3.20	-	3.40
θ	1°	3°	5°

Package Outline: TO-220F-3L


SYMBOL	MIN	NOM	MAX
A	4.50	4.70	4.83
A1	2.34	2.54	2.74
A2	0.70 REF		
A3	2.56	2.76	2.93
b	0.70	-	0.90
b1	1.18	-	1.38
b2	-	-	1.47
c	0.45	0.50	0.60
D	15.67	15.87	16.07
D1	15.55	15.75	15.95
D2	9.60	9.80	10.00
E	9.96	10.16	10.36
e	2.54BSC		
H1	6.48	6.68	6.88
L	12.68	12.98	13.28
L1	-	-	3.50
L2	6.50REF		
$\varnothing P$	3.08	3.18	3.28
Q	3.20	-	3.40
$\theta 1$	1°	3°	5°