



Features

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

Product Summary

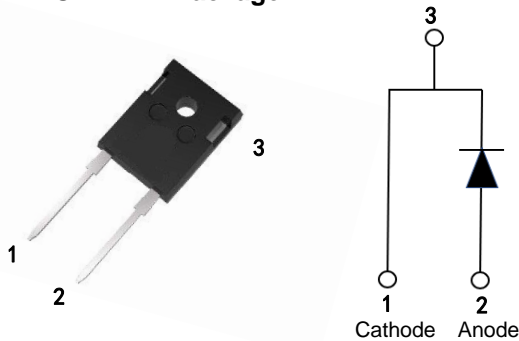
V_R	300V
I_F	20A (Per Leg)
T_J	150°C
V_F	0.91V @20A (Typ.)

Applications

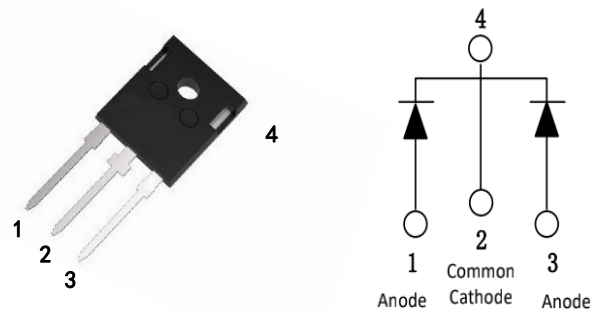
- AC-DC power adapter
- Rectifier, Convert



TO-247-2L Package



TO-247-3L Package



Package Marking and Ordering Information

Part #	Marking	Package	Packing	Qty
FSD30S20KT	D30S20	TO-247-2L	Tube	30
FSD30S40GTD	D30S40D	TO-247-3L	Tube	30

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

Symbol	Parameter	Values	Units
V_{RRM}	Peak Repetitive Reverse Voltage	300	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	20	A
I_{FSM}	Non-repetitive Peak Surge Current (8.3ms, half sine wave)	310	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	-	-	0.59	°C/W
R_{thJA}	Thermal resistance, Junction-ambient(min. footprint)	-	-	60	°C/W

Electrical Characteristics (Per Leg)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_F	Diode forward voltage	$I_F=3A, T_j=25^\circ C$	-	0.73	0.83	V
		$I_F=3A, T_j=150^\circ C$	-	0.58	0.65	
		$I_F=20A, T_j=25^\circ C$	-	0.91	0.97	
		$I_F=20A, T_j=150^\circ C$	-	0.78	0.85	
I_R	Reverse current	$V_R=300V, T_j=25^\circ C$	-	-	3	μA
		$V_R=300V, T_j=150^\circ C$	-	-	1	mA
T_{rr}	Reverse Recovery Time	$V_R=30V, I_F=0.5A,$ $di/dt=100A/\mu S, T_j=25^\circ C$	-	27	-	nS
Q_{rr}	Reverse Recovery Charge		-	25	-	μC



Typical Performance Characteristics(Per Leg)

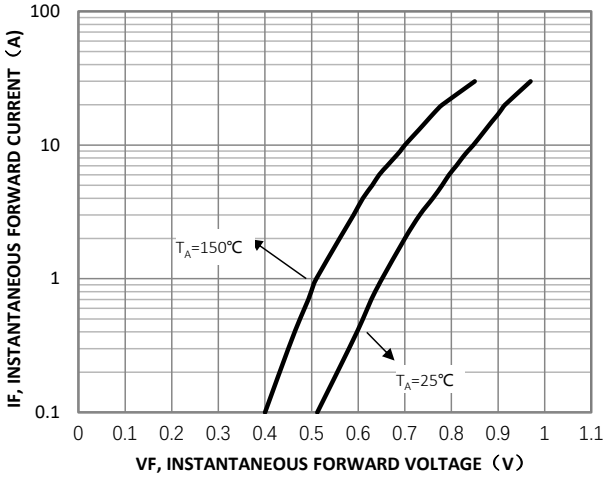


Fig1. Typical Forward Characteristics

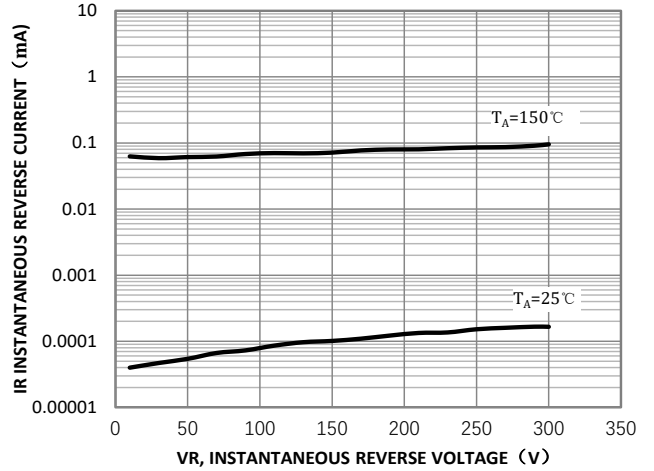


Fig2. Typical Reverse Characteristics

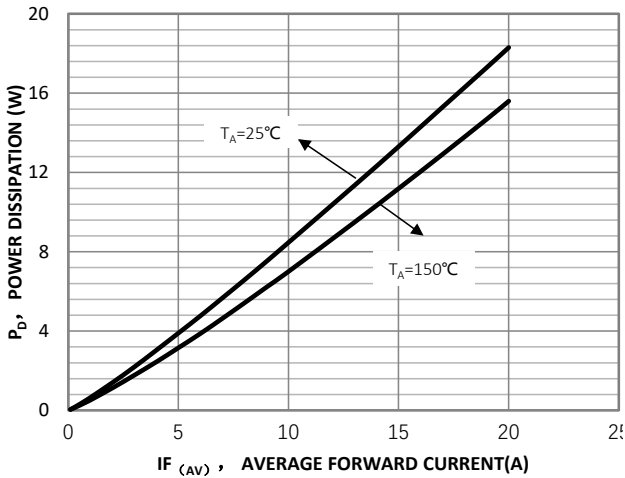


Fig3. Typical Power Dissipation

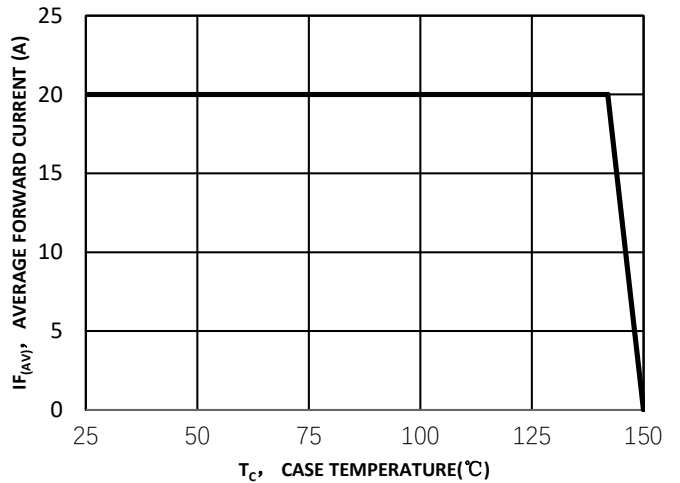
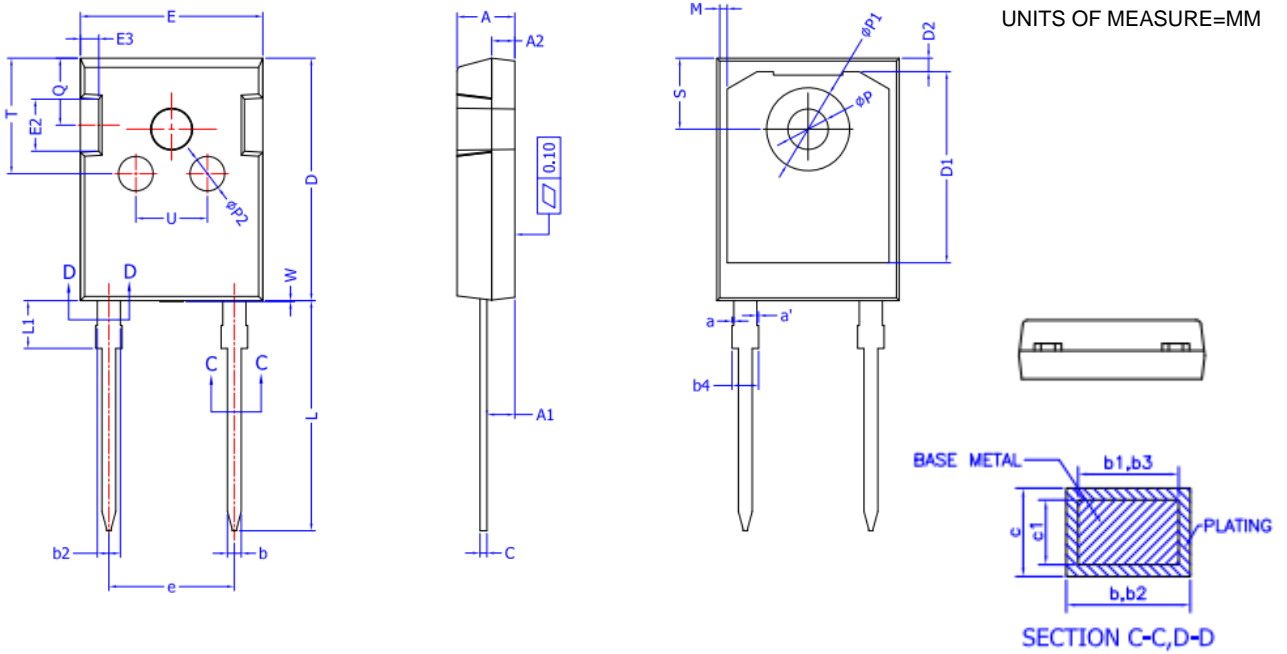
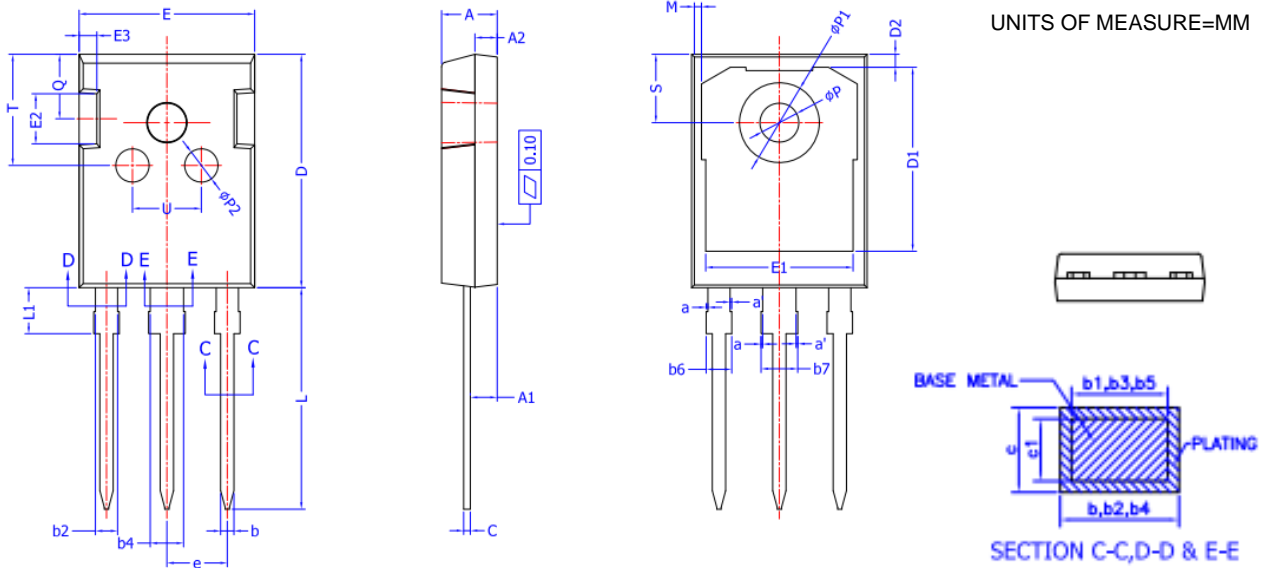


Fig4. Forward Current Derating Curve

Package Outline: TO-247-2L


SYMBOL	MIN.	NOM.	MAX.
A	4.90	5.00	5.10
A1	2.31	2.41	2.51
A2	1.90	2.00	2.10
a	0	--	0.15
a'	0	--	0.15
b	1.16	--	1.26
b1	1.15	1.2	1.22
b2	1.96	--	2.06
b3	1.95	2.00	2.02
b4	--	--	2.25
c	0.59	--	0.66
c1	0.58	0.60	0.62
D	20.90	21.00	21.10
D1	16.25	16.55	16.85
D2	1.05	1.17	1.35
E	15.70	15.80	15.90
E2	4.40	4.50	4.60
E3	1.50	1.60	1.70
e	10.872 BSC		
L	19.80	19.92	20.10
L1	--	--	4.30
M	0.35	--	0.95
P	3.40	3.50	3.60
P1	7.00	--	7.40
P2	2.40	2.50	2.60
Q	5.60	--	6.00
S	6.05	6.15	6.25
T	9.80	--	10.20
U	6.00	--	6.40
W	0	--	0.15

Package Outline: TO-247-3L


SYMBOL	MIN.	NOM.	MAX.
A	4.90	5.00	5.10
A1	2.31	2.41	2.51
A2	1.90	2.00	2.10
a	0	--	0.15
a'	0	--	0.15
b	1.16	--	1.26
b1	1.15	1.20	1.22
b2	1.96	--	2.06
b3	1.95	2.00	2.02
b4	2.96	--	3.06
b5	2.96	3.00	3.02
b6	--	--	2.25
b7	--	--	3.25
c	0.59	--	0.66
c1	0.58	0.60	0.62
D	20.90	21.00	21.10
D1	16.25	16.55	16.85
D2	1.05	1.17	1.35
E	15.70	15.80	15.90
E1	13.10	13.30	13.50
E2	4.40	4.50	4.60
E3	1.50	1.60	1.70
e		5.436 BSC	
L	19.80	19.92	20.10
L1	--	--	4.30
M	0.35	--	0.95
P	3.40	3.50	3.60
P1	7.00	--	7.40
P2	2.40	2.50	2.60
Q	5.60	--	6.00
S	6.05	6.15	6.25
T	9.80	--	10.20
U	6.00	--	6.40