FRED

Ultrafast Soft Recovery Diode, 300V, 30A×2

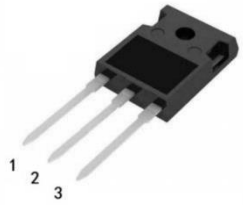
Description:

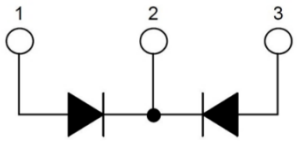
These diodes are optimized to less losses and EMI/RFI in high frequency power conditioning system. The soft recovery character of the diodes offers buffer in most applications. These devices are suited for power converters and other applications where the switching losses are not significant portion of the total losses.

Features:

- Ultrafast Recovery
- 175℃ operating junction temperature
- High frequency operation
- Low IR value
- High surge capacity
- Epitaxial chip construction

Product Summary	
V_R	300 V
$I_{F(AV)}$	2×30 A
t_{rr}	35 ns





Applications:

- Inverter welding
- Switched mode power supply
- UPS

Absolute Maximum Ratings

Parameter	Symbol	Test Conditions	Values	Units
Repetitive peak reverse voltage	V_{RRM}		300	V
Continuous forward current	$I_{F(AV)}$	T_A=110℃	60	A
Single pulse forward current	I_{FSM}	T_A=25℃	330	A
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHZ	150	A
Operating junction	T_j		175	℃
Storage temperatures	T_{stg}		-55 to +175	℃

Electrical characteristics (Ta=25℃unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Breakdown voltage Blocking voltage	V_{BR} V_R	I_R=100μA	300			V
Forward voltage	V_F	I_F=30 A		0.97	1.15	V
		I_F=30 A, Tj =125℃		0.87	1.10	V
Reverse leakage current	I_R	V_R= V_{RRM}			20	μA
		T_j=150℃, V_R=300V			200	μA
Reverse recovery time	trr	I_F=0.5A, I_R=1A, I_{RR}=0.25A			40	ns
		I_F=1A,V_R=30V, di/*dt* =200A/us		25	35	ns

Thermal characteristics

Parameter	Symbol	Typ	MAX	Units
Junction-to-Case	R_{thJC}	-	0.70	℃/W

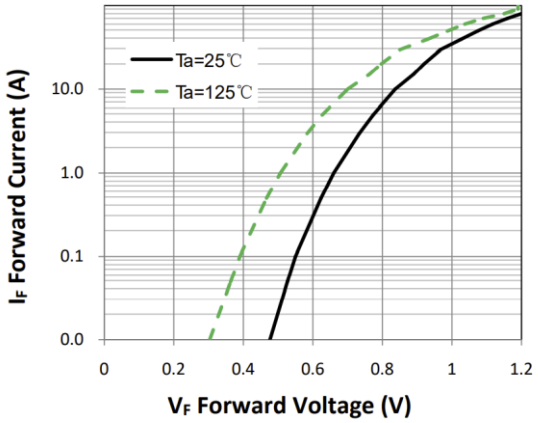


Figure 1. Forward Characteristic(typ.)

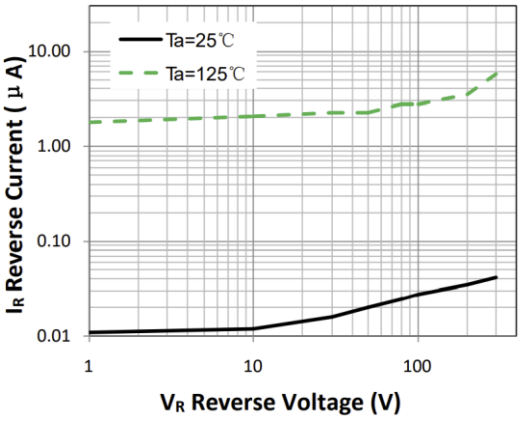
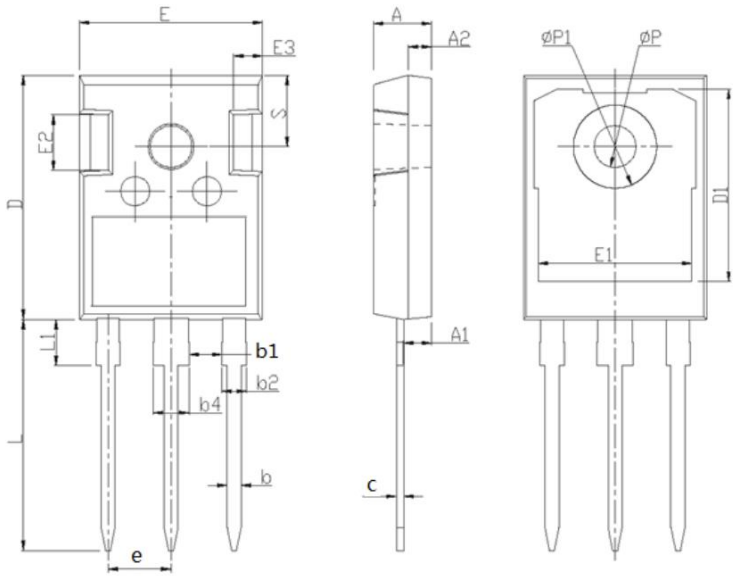


Figure 2. Reverse Characteristic (typ.)

Package Information

TO-247 PACKAGE



Symbol	Dimensions(millimeters)	
	Min.	Max.
A	4.80	5.20
A1	2.21	2.61
A2	1.85	2.15
b	1.10	1.30
b1	2.55	2.85
b2	1.90	2.15
c	0.50	0.75
D	20.70	21.30
D1	16.25	16.85
e	5.25	5.65
E	15.60	16.00
E1	13.06	13.46
E2	4.80	5.20
E3	1.80	2.50
L	19.62	20.22
L1	4.00	4.30
ΦP	3.40	3.80
ΦP1	7.00	7.30
S	5.95	6.35