

FRED

Ultrafast Soft Recovery Diode, 1700V, 75A

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.

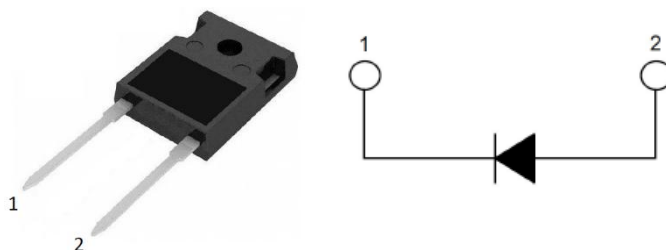
Features:

- Ultrafast Recovery
- 175°C operating junction temperature
- High frequency operation
- Low IR value
- High surge capacity

Product Summary	
V_R	1700 V
$I_{F(AV)}$	75 A
t_{rr}	55 ns

Applications:

- Switched mode power supply
- Free wheeling diode, Snubber diode
- Wind power generation



Absolute Maximum Ratings						
Parameter	Symbol	Test Conditions	Values			Units
Repetitive peak reverse voltage	V _{RRM}		1700			V
Continuous forward current	I _{F(AV)}	T _A =110°C	75			A
Single pulse forward current	I _{FSM}	T _A =25°C	760			A
Maximum repetitive forward current	I _{FRM}	Square wave, 20kHz	140			A
Operating junction	T _j		175			°C
Storage temperatures	T _{stg}		-55 to +175			°C
Electrical characteristics (Ta=25 °C unless otherwise specified)						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Breakdown voltage	V _{BR}	I _R =100μA	1700			V
Blocking voltage	V _R					
Forward voltage	V _F	I _F =75 A		3.60	5.00	V
		I _F =75 A, T _j =125°C		3.30	4.50	V
Reverse leakage current	I _R	V _R = V _{RRM}			100	μA
		T _j =150°C, V _R =1700V			1000	μA
Reverse recovery time	trr	I _F =0.5A, I _R =1A, I _{RR} =0.25A			120	ns
		I _F =1A,V _R =30V, di/dt =200A/us		75	100	ns
Thermal characteristics						
Parameter	Symbol	Typ	MAX			Units
Junction-to-Case	R _{thJC}	-	0.70			°C/W

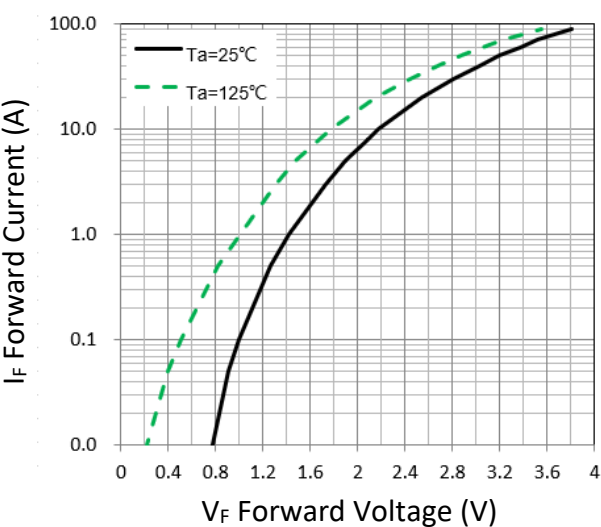


Figure 1. Forward Characteristic(typ.)

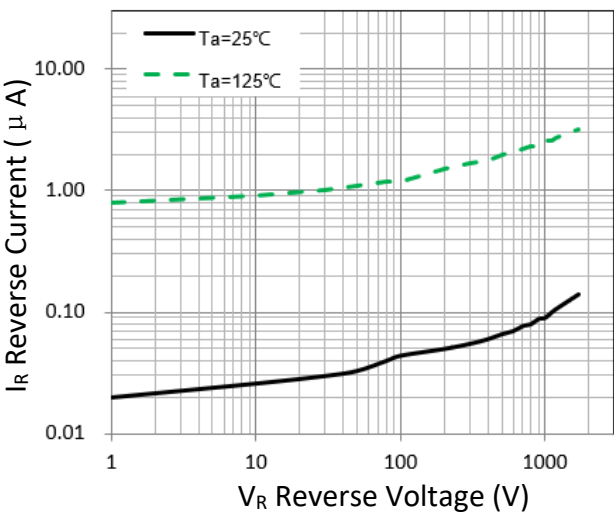


Figure 2. Reverse Characteristic (typ.)

Package Information		
TO-247-2 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
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