

FRED

Ultrafast Soft Recovery Diode, 600V, 10A×2

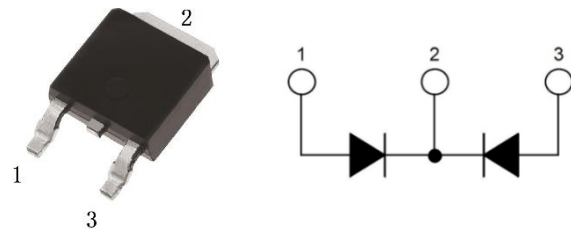
Description:

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°C operating junction temperature
- High frequency operation
- Low IR value
- High surge capacity
- Epitaxial chip construction

Product Summary	
V_R	600 V
$I_{F(AV)}$	2×10 A
t_{rr}	35 ns



Applications:

- Switched mode power supply
- Freewheeling diode, Snubber diode
- UPS

Absolute Maximum Ratings							
Parameter		Symbol	Test Conditions	Values		Units	
Repetitive peak reverse voltage		V _{RRM}		600		V	
Continuous forward current	Per device	I _{F(AV)}	T _A =110°C	20		A	
	Per diode			10			
Single pulse forward current		I _{FSM}	T _A =25°C	80		A	
Maximum repetitive forward current		I _{FRM}	Square wave, 20kHz	40		A	
Operating junction		T _j		175		°C	
Storage temperatures		T _{stg}		-55 to +175		°C	
Electrical characteristics (T _a =25 °C unless otherwise specified)							
Parameter		Symbol	Test Conditions	Min.	Typ.	Max.	Units
Breakdown voltage		V _{BR}	I _R =100μA	600			V
Blocking voltage (Per diode)		V _R					
Forward voltage (Per diode)		V _F	I _F =10 A		1.40	1.65	V
			I _F =10 A, T _j =125°C		1.30	1.55	V
Reverse leakage current (Per diode)		I _R	V _R = V _{RRM}			20	μA
			T _j =150°C, V _R =600V			200	μA
Reverse recovery time (Per diode)		trr	I _F =0.5A, I _R =1A, I _{RR} =0.25A			35	ns
			I _F =1A,V _R =30V, di/dt =200A/us		22	35	ns
Thermal characteristics							
Parameter		Symbol	Typ	MAX		Units	
Junction-to-Case		R _{thJC}	-	4.8		°C/W	

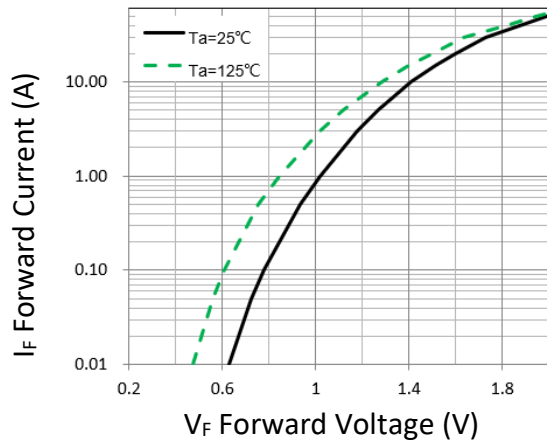


Figure 1. Forward Characteristic(typ.)

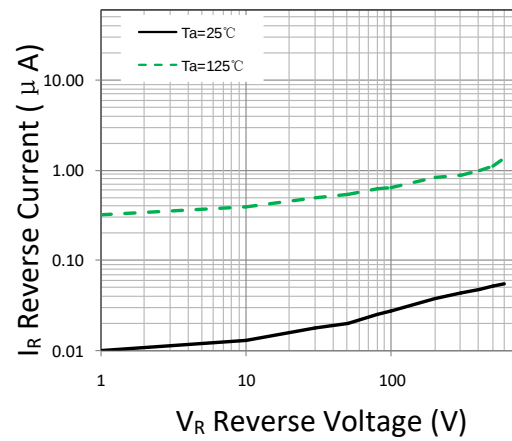
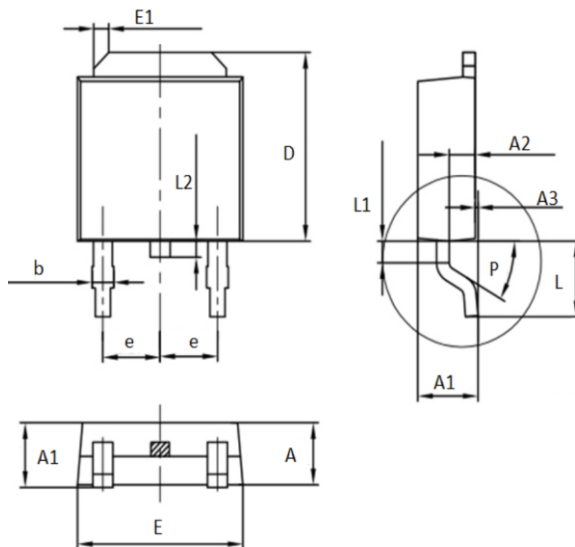


Figure 2. Reverse Characteristic (typ.)

Package Information

TO-252 PACKAGE



Symbol	Dimensions(millimeters)	
	Min.	Max.
A	2.20	2.40
A1	2.30	2.50
A2	1.10	1.20
A3	0	0.13
b	0.74	0.86
D	6.90	7.70
E	5.50	7.50
E1	0.50	1.10
e	2.20	2.40
L	2.95	3.25
L1	0.60	1.00
L2	0.60	1.00
P	25°	45°