GR80U30DB -3

FRED
Ultrafast Soft Recovery Diode, 80A/300V

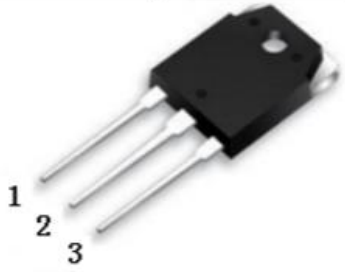
Description

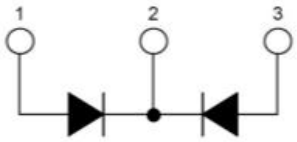
These diodes are optimized to less losses and EMI/RFI in high frequency power conditioning system. The soft recovery character of the diodes offers buffer in most applications. These devices are suited for power converters and other applications where the switching losses are not significant portion 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	300 V
$I_{F(AV)}$	2*40A
t_{rr}	26ns





Application

- 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_C =110°C	80	A
Single pulse forward current	I_{FSM}	T_C =25°C	800	
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHZ	200	
Operating junction	T_j		175	°C
Storage temperatures	Tstg		-55 to +175	°C

Electrical characteristics (Ta=25°C 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 (Per Diode)	V_F	I_F=40 A		0.96	1.20	
		I_F=40 A, Tj =125°C		0.85	1.10	
Reverse leakage current(Per Diode)	I_R	V_R= 300V			20	μA
		Tj=150°C, V_R=300V			200	
Reverse recovery time(Per Diode)	t_{rr}	I_F=0.5A, I_R=1A, I_{RR}=0.25A			45	ns
		I_F=1A,V_R=30V, di/*dt* =200A/us		26	35	

Thermal characteristics

Symbol	Parameter	Typ.	Max.	Units
$R_{\theta JC}$	Junction-to-Case	—	0.75	℃/W

Typical Characteristics

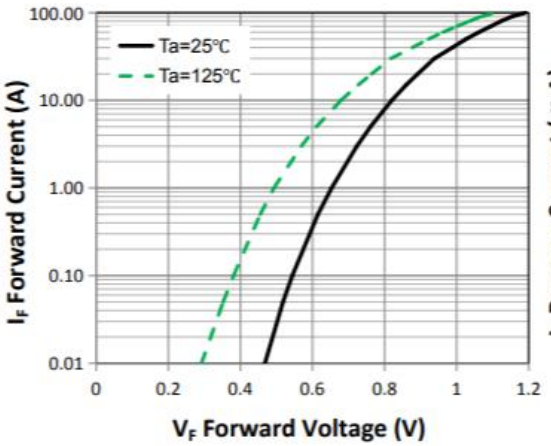


Figure 1. Forward Characteristic(typ.)

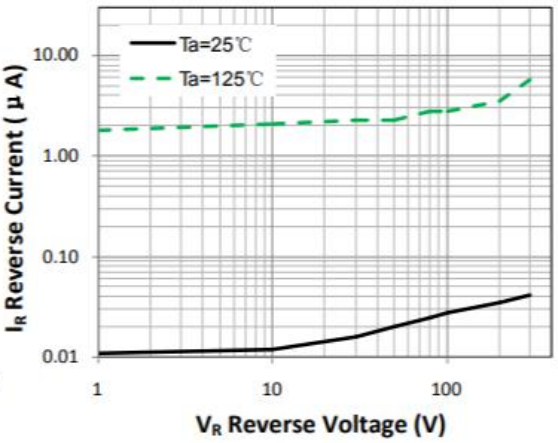


Figure 2. Reverse Characteristic (typ.)