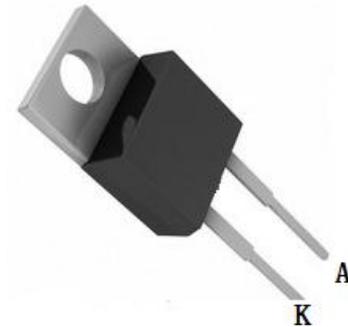# FRED
Ultrafast Soft Recovery Diode, 8A

Features:

- Ultrafast Recovery

- 175°C operating junction temperature

- High frequency operation

- Low power loss, less RFI and EMI

- Low I_R value

- High surge capacity

- Epitaxial chip construction

Product Summary	
V_R	600 V
$I_{F(AV)}$	8A
t_{rr}	21 ns

Description/Applications

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

Absolute Maximum Ratings				
Parameter	Symbol	Test Conditions	Values	Units
Repetitive peak reverse voltage	V_{RRM}		600	V
Continuous forward current	$I_{F(AV)}$	$T_C = 110°C$	8	A
Single pulse forward current	I_{FSM}	$T_C = 25°C$	72	
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHZ	16	
Operating junction	Tj		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	600			V
Forward voltage (Per Diode)	V_F	I_F=8A		1.40	1.70	V
		I_F=8A, Tj =125°C		1.25	1.60	
Reverse leakage current(Per Diode)	I_R	V_R= V_{RRM}			20	µA
		Tj=150°C, V_R=600V			200	
Reverse recovery time(Per Diode)	trr	I_F=0.5A, I_R=1A, I_{RR}=0.25A		32	50	ns
		I_F=1A,V_R=30V, di/dt =200A/us		21	35	

Thermal characteristics

Paramter	Symbol	Typ	Units
$R_{\theta JC}$	Junction-to-Case	3.0	°C/W

Electrical performance (typic)

Forward Characteristic(typ.)

Reverse Characteristic(typ.)
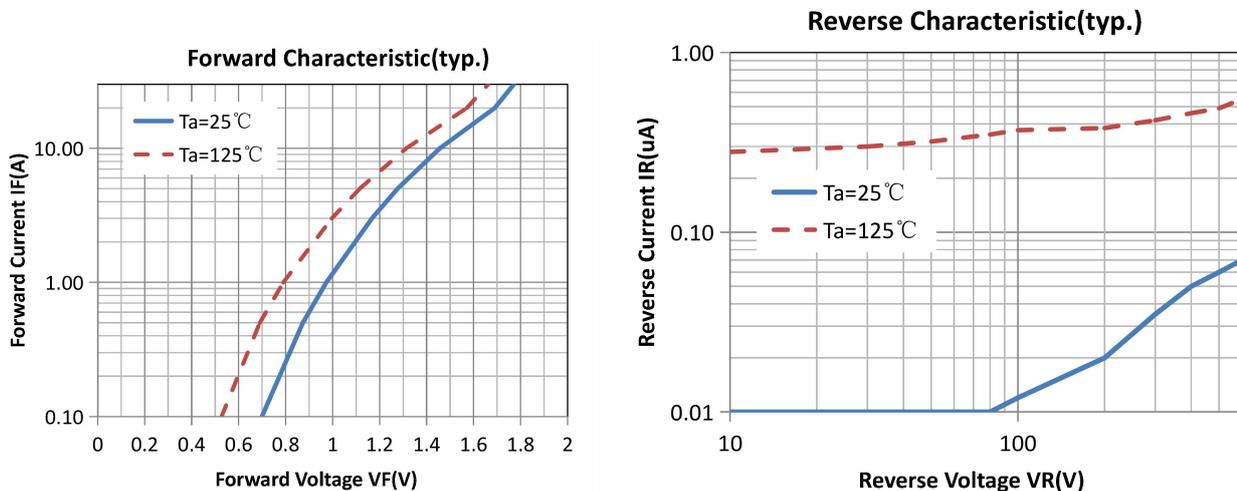
Package Information

TO-220C-2   PACKAGE
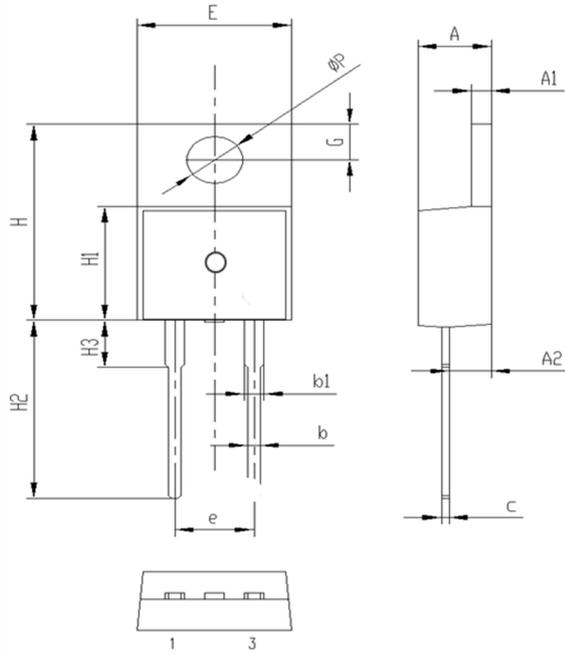
Symbol	Dimensions(millimeters)	
	Min.	Max.
A	4.30	4.70
A1	1.17	1.37
A2	2.20	2.60
b	0.60	1.00
b1	1.17	1.37
c	0.40	0.60
e	4.88	5.28
E	9.80	10.2
H	15.5	15.9
H1	9.00	9.40
H2	12.6	13.6
H3	2.80	3.20
G	2.60	3.00
ΦP	3.40	3.80