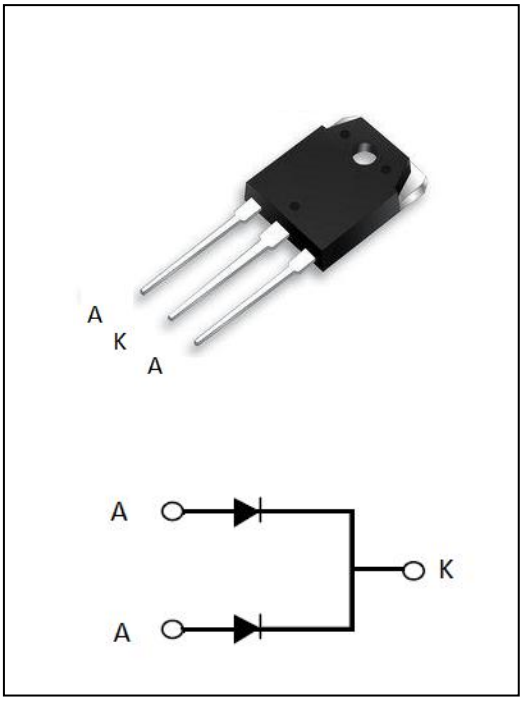
FRED
Ultrafast Soft Recovery Diode, 40A

FEATURES:

- Ultrafast Recovery
- 175°C operating junction temperature
- Designed and qualified for industrial level



Benefits:

- Reduced RFI and EMI
- Higher frequency operation
- Reduced snubbing
- Reduced part count

Product Summary	
V_R	400 V
$I_{F(AV)}$	2*20A
t_{rr}	22ns

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.

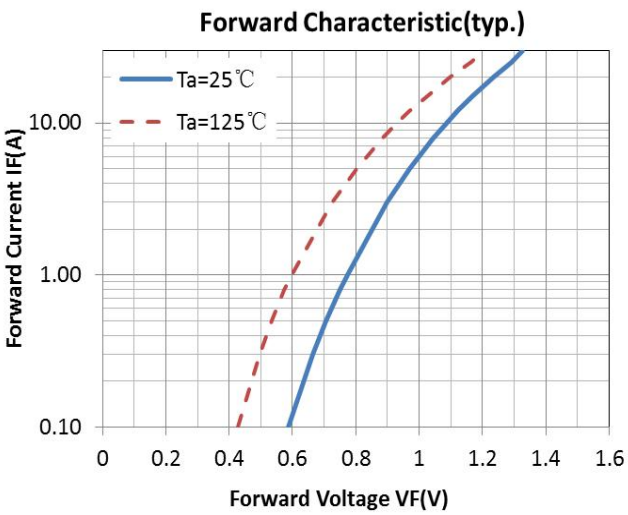
Absolute Maximum Ratings				
Parameter	**Symbol**	**Test Conditions**	**Values**	**Units**
Repetitive peak reverse voltage	V_{RRM}		400	V
Continuous forward current	$I_{F(AV)}$	Tc =110°C	20	A
Single pulse forward current	I_{FSM}	Tc =25°C	200	
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHZ	40	
Operating junction	Tj		175	°C
Storage temperatures	Tstg		-55 to +175	°C

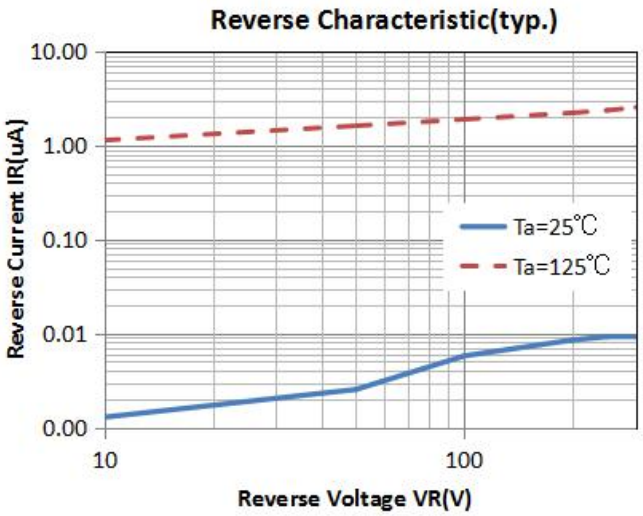
Electrical characteristics (Ta=25°C unless otherwise specified)						
Parameter	**Symbol**	**Test Conditions**	**Min**	**Typ.**	**Max.**	**Units**
Breakdown voltage Blocking voltage	V_{BR}, V_R	I_R=100μA	400			V
Forward voltage (Per Diode)	V_F	I_F=20 A		1.25	1.50	
		I_F=15 A, Tj =125°C		1.1	1.40	
Reverse leakage current(Per Diode)	I_R	V_R= V_{RRM}			20	μA
		Tj=150°C, V_R=400V			200	
Reverse recovery time(Per Diode)	t_{rr}	I_F=0.5A, I_R=1A, I_{RR}=0.25A		30	50	ns
		I_F=1A,V_R=30V, di/*dt* =200A/us		22	30	

Thermal characteristics

Paramter	**Symbol**	Typ	Units
Junction-to-Case	$R_{\theta JC}$	0.8	℃/W

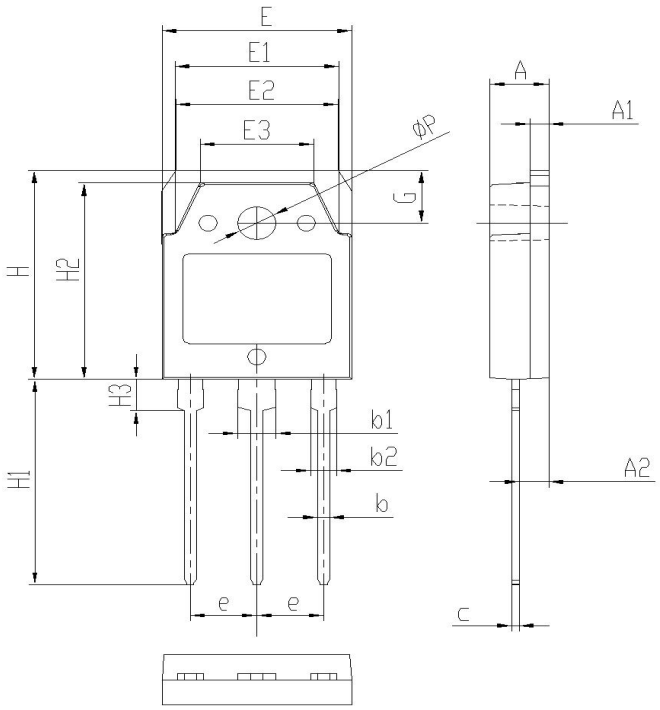
Electrical performance (typic)





Package Information

TO-3PB PACKAGE



Symbol	UNIT mm		
	Min	**Typ**	Max
A	4.60	4.80	5.00
A1	1.3	1.5	1.7
A2	2.20	2.40	2.60
b	0.80	1.0	1.20
b1	2.90	3.10	3.30
b2	1.80	2.00	2.20
c	0.50	0.60	0.70
e	5.25	5.45	5.65
E	15.2	15.6	16.0
E1	13.2	13.4	13.6
E2	15.1	15.3	16.5
E3	9.1	9.3	9.5
H	19.8	20.0	20.2
H1	19.0	19.5	20.0
H2	18.3	18.5	18.7
H3	2.8	3.0	3.2
G	4.8	5.0	5.2
ΦP	3.00	3.20	3.40