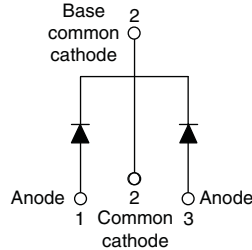


Ultrafast Rectifier, 2 x 10 A FRED Pt™


TO-220AB


FEATURES

- Ultrafast recovery time
- Low forward voltage drop
- Low leakage current
- 175 °C operating junction temperature
- Designed and qualified for industrial level

DESCRIPTION/APPLICATIONS

MUR.. series are the state of the art ultrafast recovery rectifiers specifically designed with optimized performance of forward voltage drop and ultrafast recovery time.

The planar structure and the platinum doped life time control, guarantee the best overall performance, ruggedness and reliability characteristics.

These devices are intended for use in the output rectification stage of SMPS, UPS, dc-to-dc converters as well as freewheeling diode in low voltage inverters and chopper motor drives.

Their extremely optimized stored charge and low recovery current minimize the switching losses and reduce over dissipation in the switching element and snubbers.

PRODUCT SUMMARY

t_{rr}	25 ns
$I_{F(AV)}$	2 x 10 A
V_R	200 V

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS	MAX.	UNITS
Peak repetitive reverse voltage	V_{RRM}		200	V
Average rectified forward current	$I_{F(AV)}$	per leg	10	A
		total device	20	
Non-repetitive peak surge current per leg	I_{FSM}	Rated V_R , $T_C = 145\text{ °C}$	100	
Peak repetitive forward current per leg	I_{FM}	Rated V_R , square wave, 20 kHz, $T_C = 145\text{ °C}$	20	
Operating junction and storage temperatures	T_J, T_{Stg}		- 65 to 175	°C

ELECTRICAL SPECIFICATIONS ($T_J = 25\text{ °C}$ unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Breakdown voltage, blocking voltage	V_{BR}, V_R	$I_R = 100\text{ }\mu\text{A}$	200	-	-	V
Forward voltage	V_F	$I_F = 8\text{ A}, T_J = 125\text{ °C}$	-	-	0.85	
		$I_F = 16\text{ A}$	-	-	1.15	
		$I_F = 16\text{ A}, T_J = 125\text{ °C}$	-	-	1.05	
Reverse leakage current	I_R	$V_R = V_R\text{ rated}$	-	-	15	μA
		$T_J = 150\text{ °C}, V_R = V_R\text{ rated}$	-	-	250	
Junction capacitance	C_T	$V_R = 200\text{ V}$	-	55	-	pF
Series inductance	L_S	Measured lead to lead 5 mm from package body	-	8.0	-	nH

DYNAMIC RECOVERY CHARACTERISTICS (T _J = 25 °C unless otherwise specified)						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Reverse recovery time	t _{rr}	I _F = 1.0 A, dI _F /dt = 50 A/μs, V _R = 30 V	-	-	35	ns
		I _F = 0.5 A, I _R = 1.0 A, I _{REC} = 0.25 A	-	-	25	
		T _J = 25 °C	-	21	-	
		T _J = 125 °C	-	35	-	
Peak recovery current	I _{RRM}	T _J = 25 °C	-	1.9	-	A
		T _J = 125 °C	-	4.8	-	
Reverse recovery charge	Q _{rr}	T _J = 25 °C	-	25	-	nC
		T _J = 125 °C	-	78	-	

THERMAL - MECHANICAL SPECIFICATIONS						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Maximum junction and storage temperature range	T _J , T _{Stg}		- 65	-	175	°C
Thermal resistance, junction to case per leg	R _{thJC}		-	-	2.5	°C/W
Thermal resistance, junction to ambient per leg	R _{thJA}		-	-	50	
Thermal resistance, case to heatsink	R _{thCS}	Mounting surface, flat, smooth and greased	-	0.5	-	
Weight			-	2.0	-	g
			-	0.07	-	oz.
Mounting torque			6.0 (5.0)	-	12 (10)	kgf · cm (lbf · in)
Marking device		Case style TO-220AB	MUR2020CT			

ORDERING INFORMATION TABLE

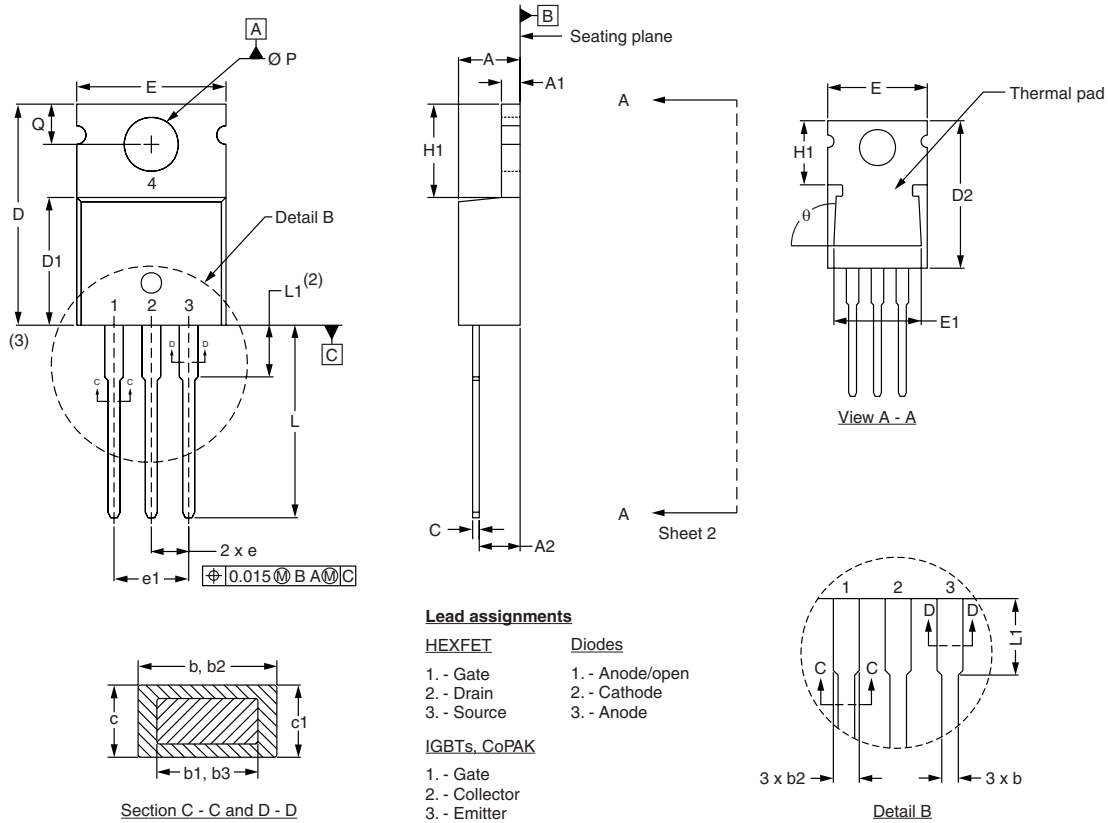
Device code	MUR	20	20	CT	-
	①	②	③	④	⑤

- | | | |
|----------|---|---|
| 1 | - | Ultrafast MUR series |
| 2 | - | Current rating (20 = 20 A) |
| 3 | - | Voltage rating (20 = 200 V) |
| 4 | - | CT = Center tap (dual) |
| 5 | - | <ul style="list-style-type: none">• None = Standard production• PbF = Lead (Pb)-free |

Tube standard pack quantity: 50 pieces

TO-220AB

DIMENSIONS in millimeters and inches



SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	3.56	4.82	0.140	0.190	
A1	0.51	1.40	0.020	0.055	
A2	2.04	2.92	0.080	0.115	
b	0.38	1.01	0.015	0.040	
b1	0.38	0.96	0.015	0.038	4
b2	1.15	1.77	0.045	0.070	
b3	1.15	1.73	0.045	0.068	
c	0.36	0.61	0.014	0.024	
c1	0.36	0.56	0.014	0.022	4
c2	0.31	1.14	0.012	0.045	
D	14.22	15.87	0.560	0.625	3

SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
D1	8.38	9.02	0.330	0.355	
D2	12.19	12.88	0.480	0.507	
E	9.66	10.66	0.380	0.420	3
E1	8.38	8.89	0.330	0.350	
e	2.54 BSC		0.100 BSC		
H1	5.85	6.86	0.230	0.270	
L	12.70	14.73	0.500	0.580	
L1	-	6.35	-	0.250	2
Ø P	3.54	3.73	0.139	0.147	
Q	2.54	3.05	0.100	0.120	
θ	90° to 93°		90° to 93°		

Notes

- (1) Dimensioning and tolerancing per ASME Y14.5M-1994
- (2) Lead dimension and finish uncontrolled in L1
- (3) Dimension D and E do not include mold flash. Mold flash shall not exceed 0.127 mm (0.005") per side. These dimensions are measured at the outermost extremes of the plastic body
- (4) Dimension b1 and c1 apply to base metal only
- (5) Controlling dimensions: inches