QR1506/QR1506F/QR1506D

PLANAR STRUCTURED SUPERFAST RECOVERY RECTIFIERS

VOLTAGE 600 Volt **CURRENT** 15 Ampere

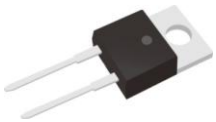
FEATURES

- Planar structure with EPI wafer
- Ultrafast recovery time, low V_F and soft recovery
- For PFC (DCM/CCM) operation
- Low leakage current
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O Flame Retardant Epoxy Molding Compound
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

MECHANICAL DATA

- Case: TO-220AC, ITO-220AC, TO-263 package
- Terminals: Lead solderable per MIL-STD-750, Method 2026
- TO-220AC Weight: 0.067 ounces, 1.89 grams
- ITO-220AC Weight: 0.055 ounces, 1.56 grams
- TO-263 Weight: 0.049 ounces, 1.38 grams

QR1506 TO-220AC



QR1506F ITO-220AC

QR1506D TO-263

MAXIMUM RATINGS(T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Maximum recurrent peak reverse voltage	V_{RRM}	600	V
Maximum rms voltage	V_{RMS}	420	V
Maximum dc blocking voltage	V_R	600	V
Maximum average forward rectified current	$I_{F(AV)}$	15	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	200	A
Typical thermal resistance TO-220AC(Note 1) ITO-220AC(Note 1) TO-263 (Note 1)	$R_{\Theta JC}$	2 5.5 2	°C/W
Operating junction temperature range	T_J	-55 to + 175	°C
Storage temperature range	T_{STG}	-55 to + 175	°C

NOTE :

1. Device mounted on a infinite heatsink , then measured the center of the marking side.

QR1506/QR1506F/QR1506D

ELECTRICAL CHARACTERISTICS(T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN.	TYP.	MAX.	UNIT
Breakdown voltage	V_{BR}	I_R=100μA		600	-	-	V
Instantaneous forward voltage	V_F	I_F=1A I_F=5A I_F=15A	T_J=25°C	- - -	0.86 1.13 1.37	- - 1.65	V
		I_F=1A I_F=5A I_F=15A	T_J=125°C	- - -	0.62 0.86 1.13	- - 1.35	V
Reverse leakage current	I_R	V_R=600V	T_J=25 C T_J=125°C	- -	- -	3 100	μA
Reverse recovery time	T_{RR}	I_F=0.5A I_R=1A I_{RR}=0.25A	T_J=25°C	-	-	45	ns
		I_F=1A V_R=30V di/dt=100A/μs	T_J=25°C	-	-	35	ns
		I_F=15A V_R=400V di/dt=200A/μs	T_J=25°C	-	50	-	ns
Peak recovery current	I_{RRM}	I_F=15A V_R=400V di/dt=200A/μs	T_J=25°C	-	3.5	-	A
Reverse recovery charge	Q_{RR}	I_F=15A V_R=400V di/dt=200A/μs	T_J=25°C	-	85	-	nC
Softness factor = tb/ta	S	I_F=15A V_R=400V di/dt=200A/μs	T_J=25°C	-	0.93	-	-
Softness factor = tb/ta	S	I_F=15A V_R=400V di/dt=200A/μs	T_J=125°C	-	0.42	-	-

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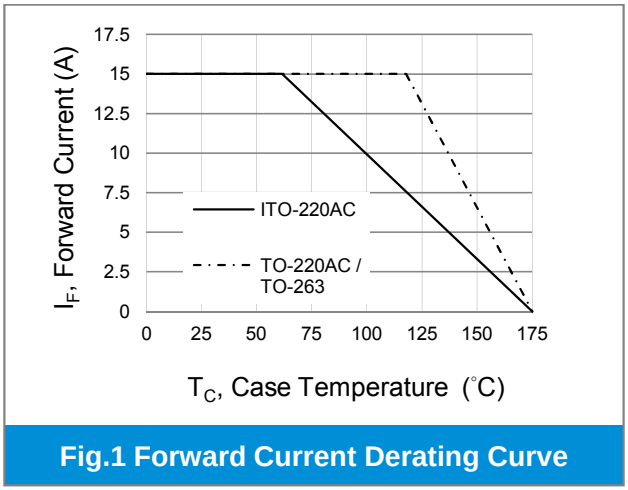


Fig.1 Forward Current Derating Curve

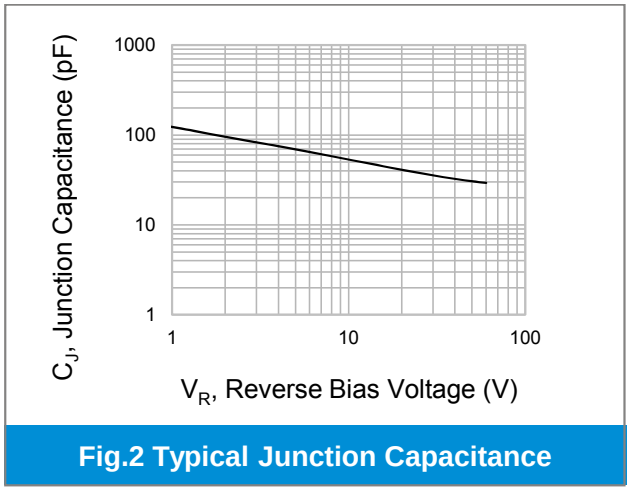


Fig.2 Typical Junction Capacitance

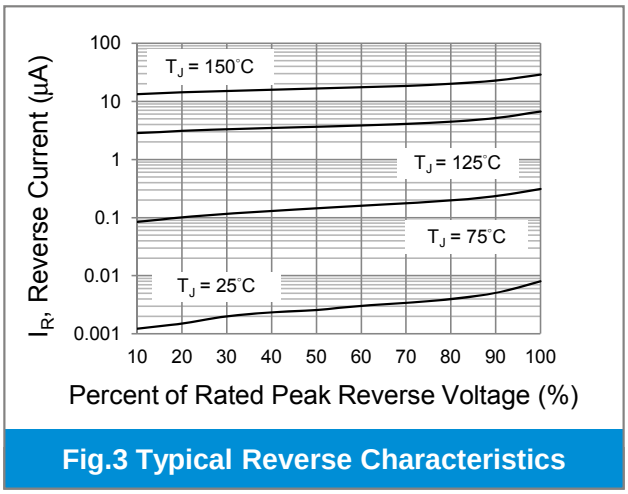


Fig.3 Typical Reverse Characteristics

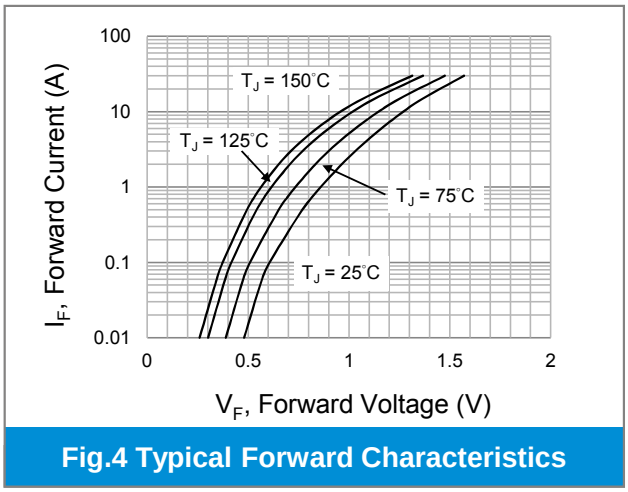


Fig.4 Typical Forward Characteristics

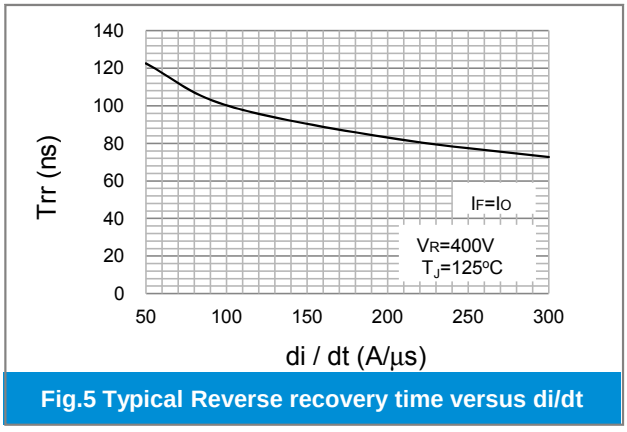


Fig.5 Typical Reverse recovery time versus di/dt

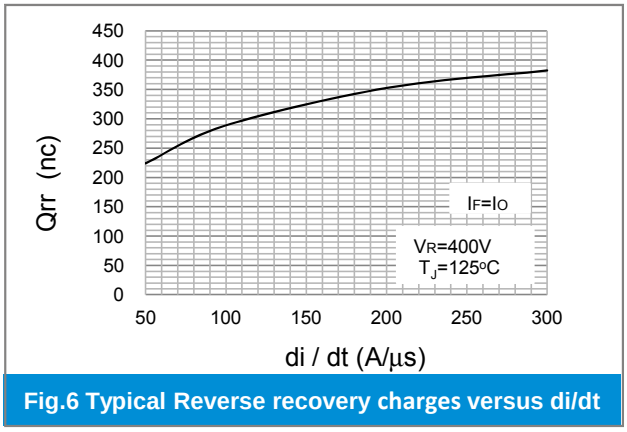
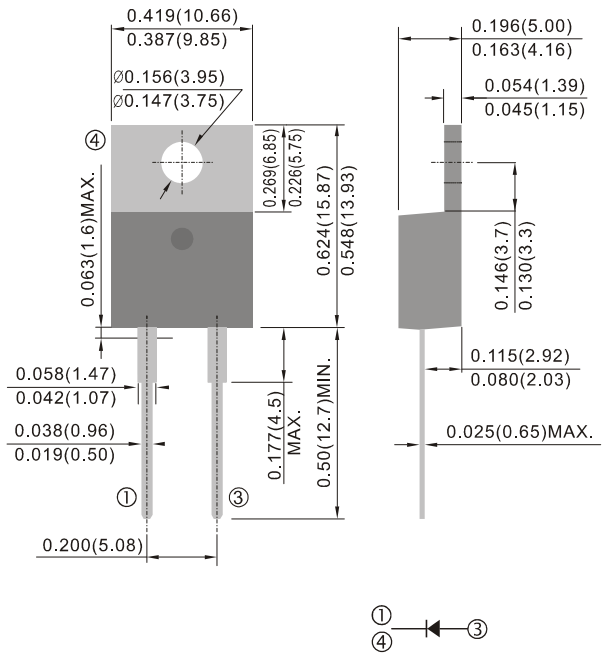


Fig.6 Typical Reverse recovery charges versus di/dt

QR1506/QR1506F/QR1506D

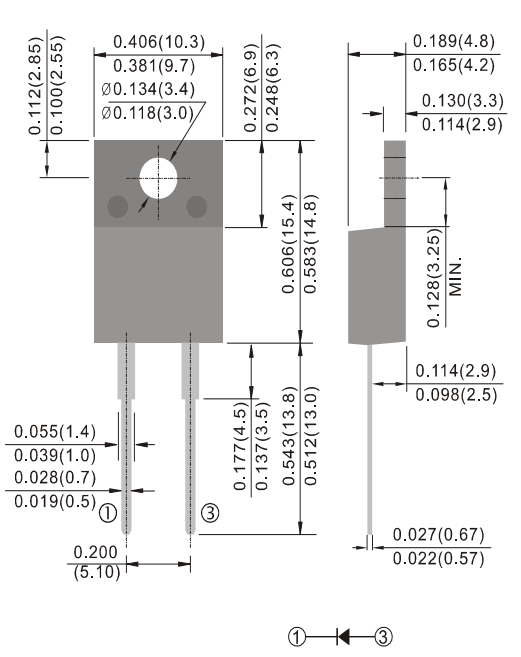
TO-220AC

Unit : inch(mm)



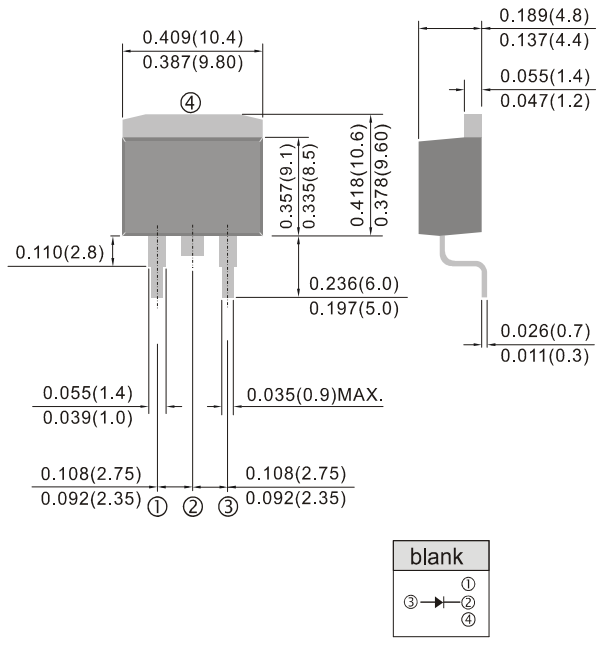
ITO-220AC

Unit : inch(mm)



TO-263 / D²PAK

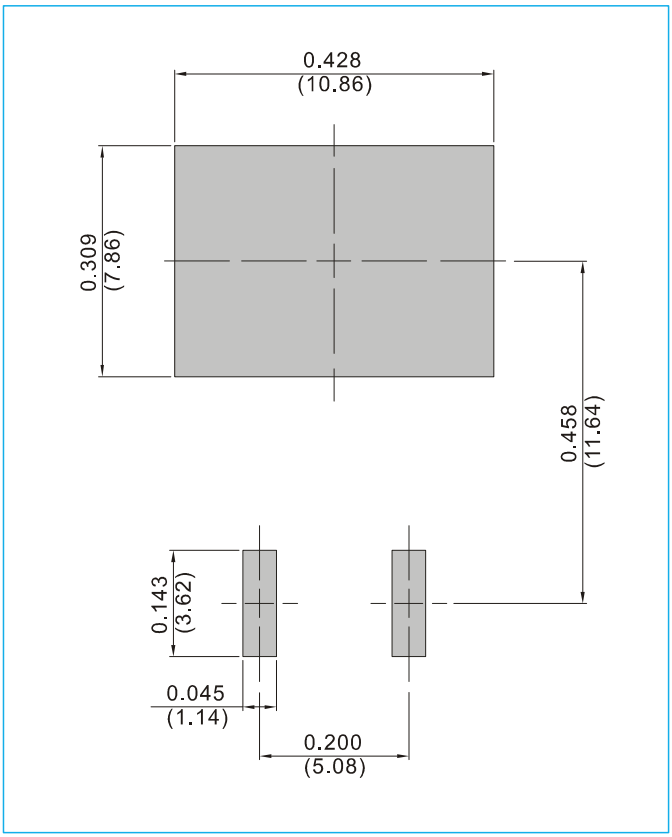
Unit : inch(mm)



QR1506/QR1506F/QR1506D

MOUNTING PAD LAYOUT

TO-263 / D²PAK Unit : inch(mm)



ORDER INFORMATION

- Packing information

  T/R - 0.8K per 13" plastic Reel

QR1506/QR1506F/QR1506D

Part No_packing code_Version

QR1506_T0_00001
QR1506F_T0_00001
QR1506D_R2_00001

For example :

RB500V-40_R2_00001

Packing Code XX				Version Code XXXXX		
Packing type	1st Code	Packing size code	2nd Code	HF or RoHS	1st Code	2nd~5th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			

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