QRT10A06 \ QRT10A06F \ QRT10A06D

PLANAR STRUCTURED SUPERFAST RECOVERY RECTIFIERS

Voltage	600 V	Current	10 A

Features

- Planar structure with EPI wafer
- Hyperfast recovery time, reduced Qrr and soft recovery
- For PFC 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: solder plated, 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.
- Marking: Part number

QRT10A06 TO-220AC

QRT10A06F ITO-220AC

QRT10A06D TO-263

Maximum Ratings And Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	VALUE	UNIT
Maximum repetitive 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		$I_{F(AV)}$	10	A
Peak forward surge current : 8.3ms single half sine-wave superimposed on rated load		I_{FSM}	75	A
Typical thermal resistance	TO-220AC (Note 1)	$R_{\theta JC}$	3	°C/W
	ITO-220AB (Note 1)		7	
	TO-263 (Note 2)		4	
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.

2. Device mounted on a 10cm*10cm*1mm copper pad area, then measured the center of the marking side.

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Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNITS
Breakdown voltage	V_{BR}	I_R=100μA	T_J=25°C	600	-	-	V
Instantaneous forward voltage	V_F	I_F=1A	T_J=25°C	-	1.17	-	V
		I_F=5A		-	1.84	-	
		I_F=10A		-	2.25	2.4	
		I_F=1A	T_J=125°C	-	0.83	-	V
		I_F=5A		-	1.36	-	
		I_F=10A		-	1.74	-	
Reverse current	I_R	V_R=600V	T_J=25°C	-	-	1	μA
Reverse recovery time	T_{RR}	I_F=0.5A I_R=1A I_{rr}=0.25A	T_J=25°C	-	-	25	ns
		I_F=1A V_R=30V di/dt=100A/μs	T_J=25°C	-	-	20	ns
		I_F=10A V_R=400V di/dt=200A/μs	T_J=25°C	-	32	-	ns
Peak recovery current	I_{RRM}	I_F=10A V_R=400V di/dt=200A/μs	T_J=25°C	-	2	-	A
Reverse recovery charge	Q_{RR}	I_F=10A V_R=400V di/dt=200A/μs	T_J=25°C	-	32	-	nC
Softness factor = tb/ta	S	I_F=10A V_R=400V di/dt=200A/μs	T_J=25°C	-	3.77	-	-
Softness factor = tb/ta	S	I_F=10A V_R=400V di/dt=200A/μs	T_J=125°C	-	0.85	-	-

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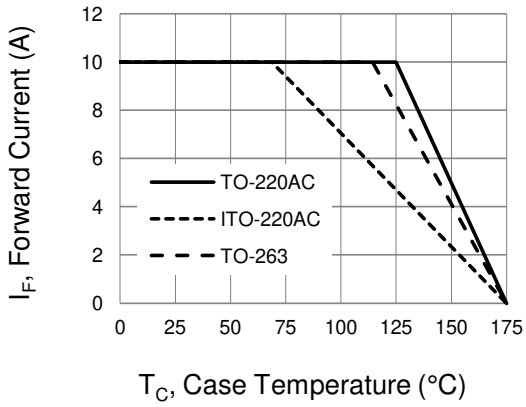

Fig.1 Forward Current Derating Curve

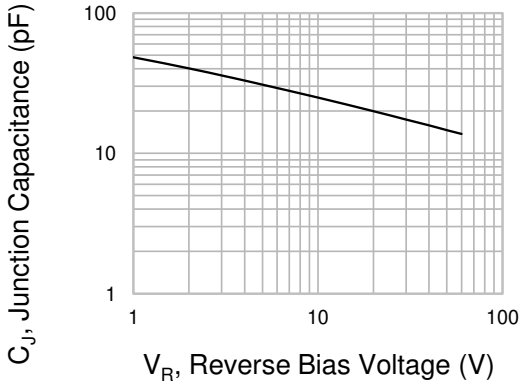

Fig.2 Typical Junction Capacitance

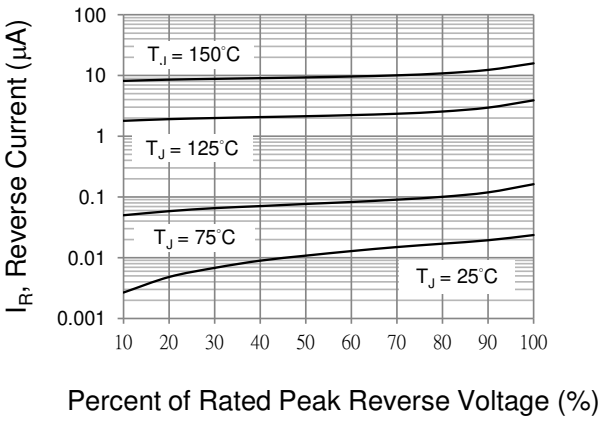

Fig.3 Typical Reverse Characteristics

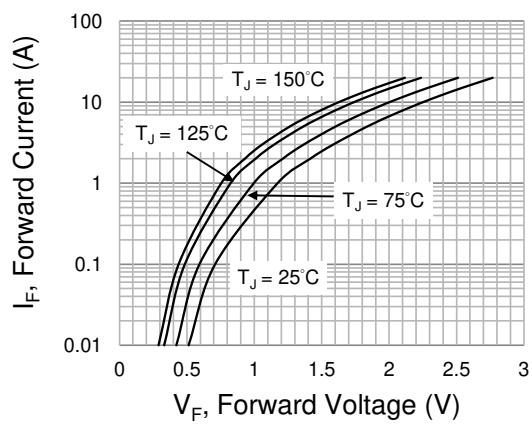

Fig.4 Typical Forward Characteristics

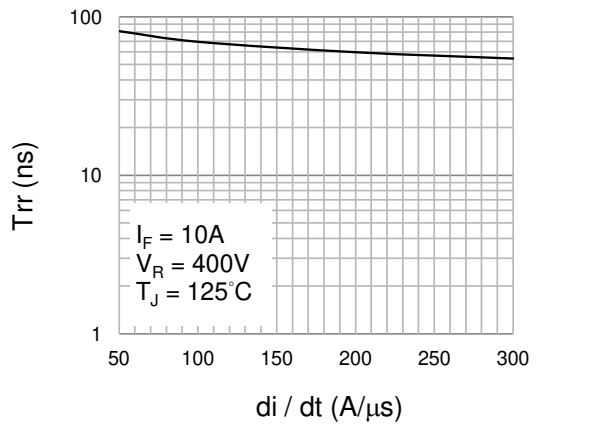

Fig.5 Typical Reverse recovery time versus di/dt

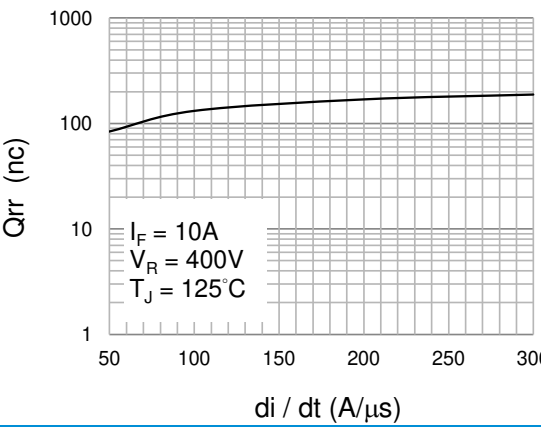

Fig.6 Typical Reverse recovery charges versus di/dt

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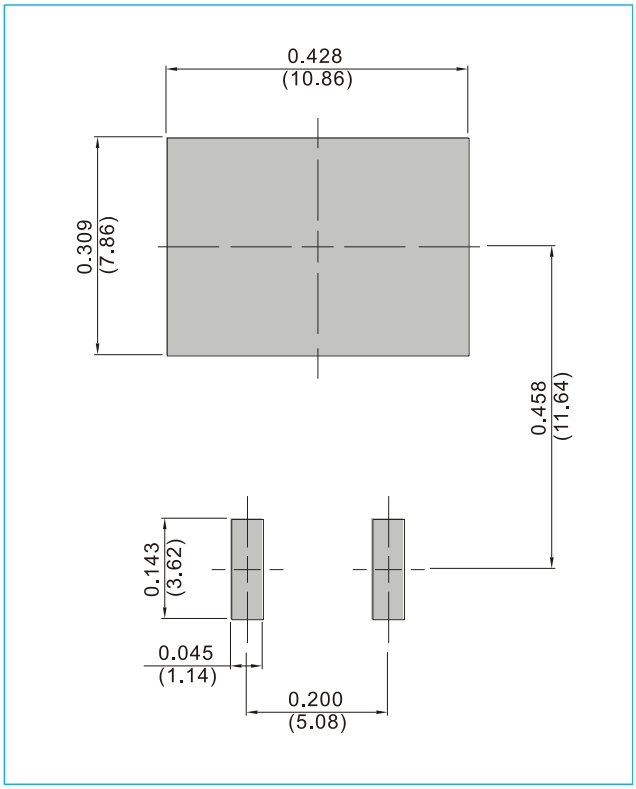
MOUNTING PAD LAYOUT

TO-263 / D²PAK Unit：inch(mm)



ORDER INFORMATION

- Packing information
  T/R – 0.8K per 13" plastic Reel

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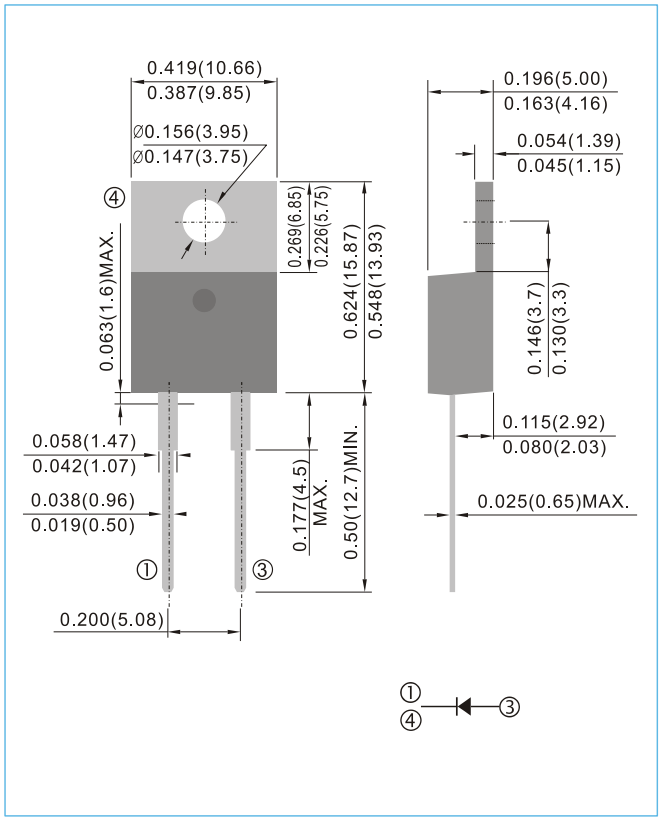
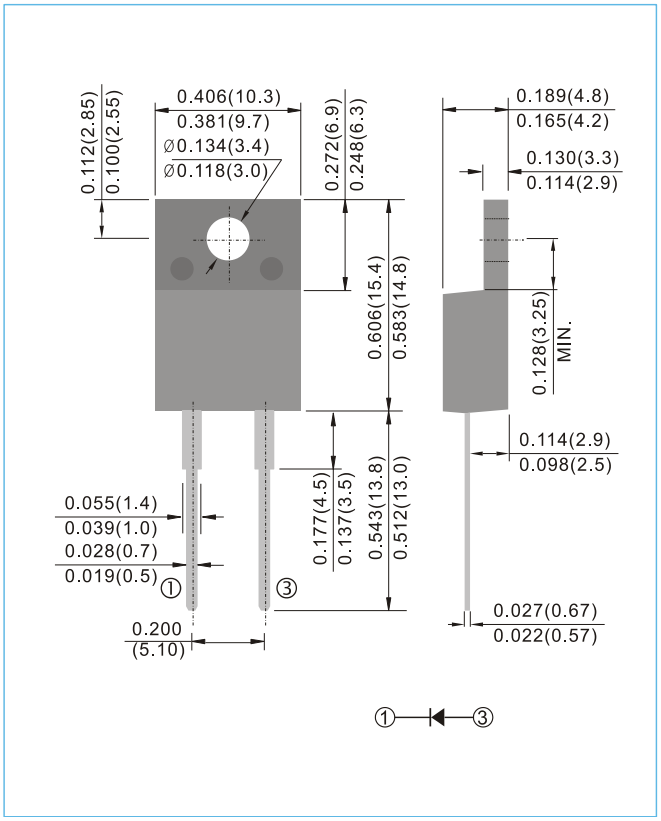
TO-220AC

Unit : inch(mm)



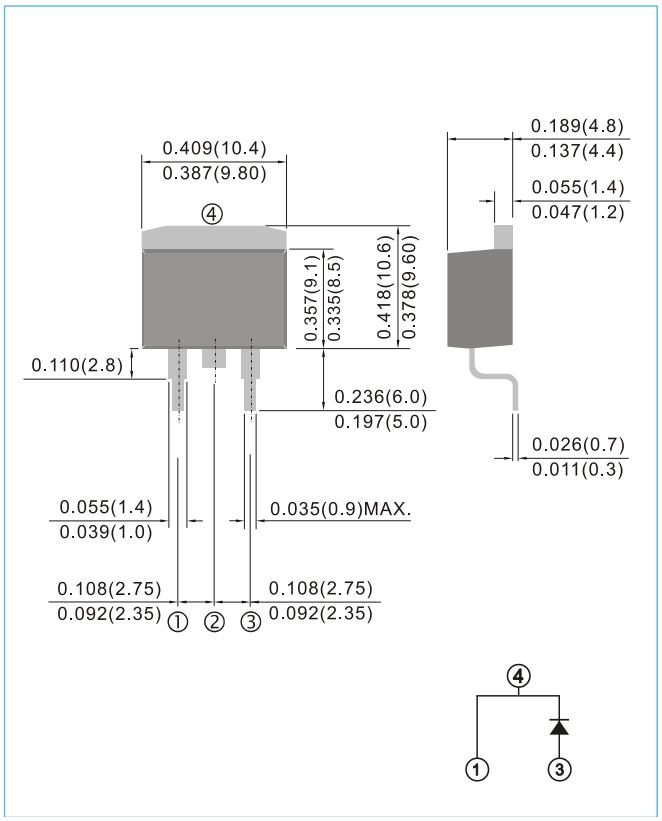
ITO-220AC

Unit : inch(mm)



TO-263 / D²PAK

Unit : inch(mm)



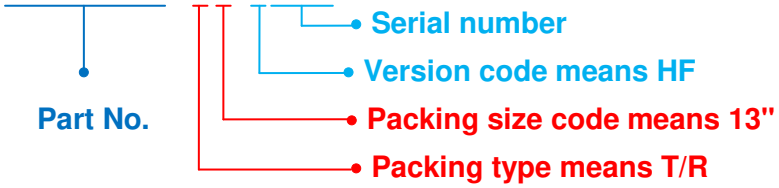
QRT10A06 \ QRT10A06F \ QRT10A06D

Part No_packing code_Version

QRT10A06_T0_00001
QRT10A06_T0_10001
QRT10A06F_T0_00001
QRT10A06F_T0_10001
QRT10A06D_R2_00001
QRT10A06D_R2_10001

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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