

QRT812 \ QRT812F \ QRT812D

PLANAR STRUCTURED SUPERFAST RECOVERY RECTIFIERS

Voltage **1200 V** **Current** **8 A**

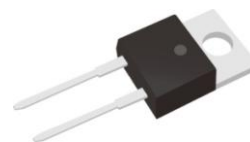
Features

- Planar structure with EPI wafer
- Hyperfast recovery time, reduced Q_{rr} 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

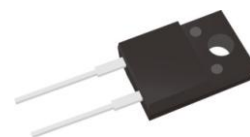
Mechanical Data

- 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

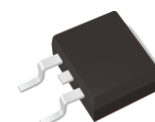
QRT812 TO-220AC



QRT812F ITO-220AC



QRT812D TO-263



Maximum Ratings And Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER		SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	1200	V
Maximum rms voltage		V_{RMS}	840	V
Maximum dc blocking voltage		V_R	1200	V
Maximum average forward rectified current		$I_{F(AV)}$	8	A
Peak forward surge current : 8.3ms single half sine-wave superimposed on rated load		I_{FSM}	90	A
Typical thermal resistance	TO-220AC (Note 1)	$R_{\theta JC}$	2	$^{\circ}\text{C/W}$
	ITO-220AC (Note 1)		5.5	
	TO-263 (Note 1)		2	
Operating junction temperature range		T_J	-55 to +175	$^{\circ}\text{C}$
Storage temperature range		T_{STG}	-55 to +175	$^{\circ}\text{C}$

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



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Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNITS
Breakdown voltage	V_{BR}	$I_R=100\mu\text{A}$	$T_J=25^{\circ}\text{C}$	1200	-	-	V
Instantaneous forward voltage	V_F	$I_F=1\text{A}$	$T_J=25^{\circ}\text{C}$	-	1.46	-	V
		$I_F=5\text{A}$	$T_J=25^{\circ}\text{C}$	-	2.06	-	
		$I_F=8\text{A}$	$T_J=25^{\circ}\text{C}$	-	2.29	3.2	
		$I_F=1\text{A}$	$T_J=125^{\circ}\text{C}$	-	0.99	-	V
		$I_F=5\text{A}$	$T_J=125^{\circ}\text{C}$	-	1.58	-	
		$I_F=8\text{A}$	$T_J=125^{\circ}\text{C}$	-	1.82	-	
Reverse current	I_R	$V_R=1200\text{V}$	$T_J=25^{\circ}\text{C}$	-	-	3	μA
			$T_J=125^{\circ}\text{C}$	-	5	-	μA
Reverse recovery time	T_{RR}	$I_F=1\text{A}$ $V_R=30\text{V}$ $di/dt=100\text{A}/\mu\text{s}$	$T_J=25^{\circ}\text{C}$	-	-	40	ns
		$I_F=8\text{A}$ $V_R=400\text{V}$ $di/dt=200\text{A}/\mu\text{s}$	$T_J=25^{\circ}\text{C}$	-	45	-	ns
Peak recovery current	I_{RRM}	$I_F=8\text{A}$ $V_R=400\text{V}$ $di/dt=200\text{A}/\mu\text{s}$	$T_J=25^{\circ}\text{C}$	-	3.9	-	A
Reverse recovery charge	Q_{RR}	$I_F=8\text{A}$ $V_R=400\text{V}$ $di/dt=200\text{A}/\mu\text{s}$	$T_J=25^{\circ}\text{C}$	-	87.7	-	nC

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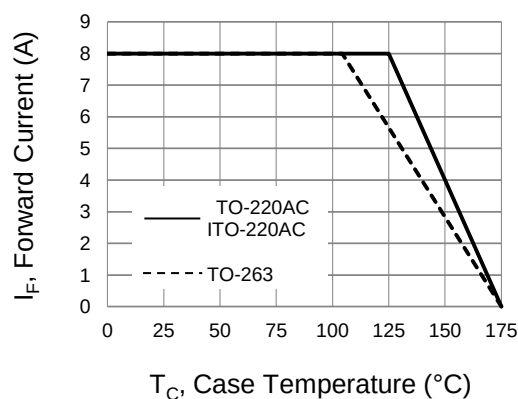


Fig.1 Forward Current Derating Curve

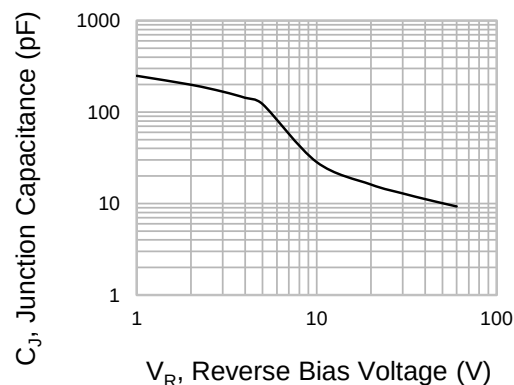


Fig.2 Typical Junction Capacitance

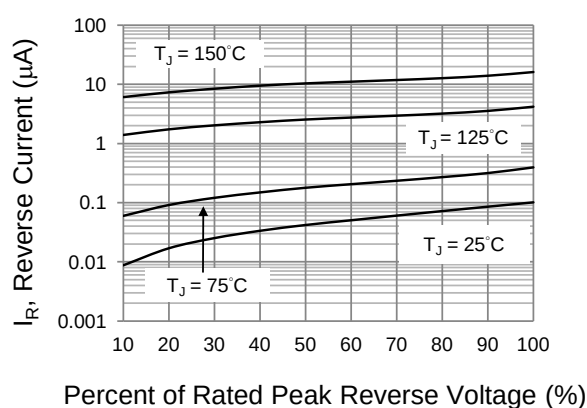


Fig.3 Typical Reverse Characteristics

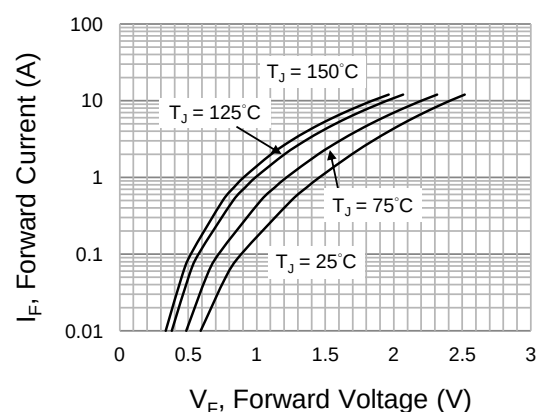


Fig.4 Typical Forward Characteristics

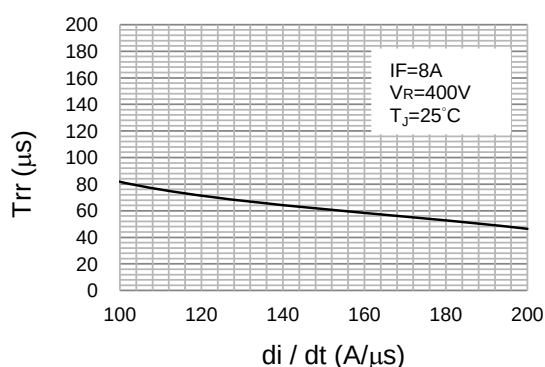


Fig.5 Typical Reverse Recovery Time Versus di/dt

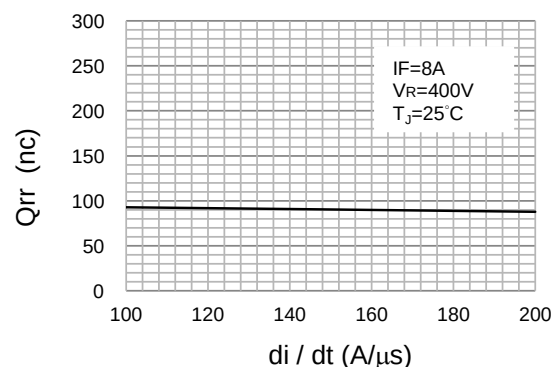
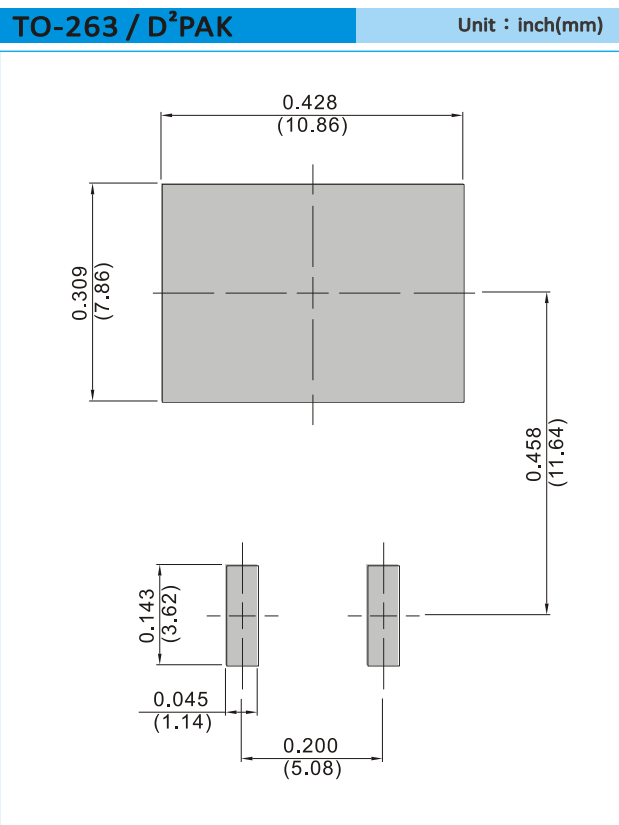


Fig.6 Typical Reverse Recovery Charges Versus di/dt

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MOUNTING PAD LAYOUT



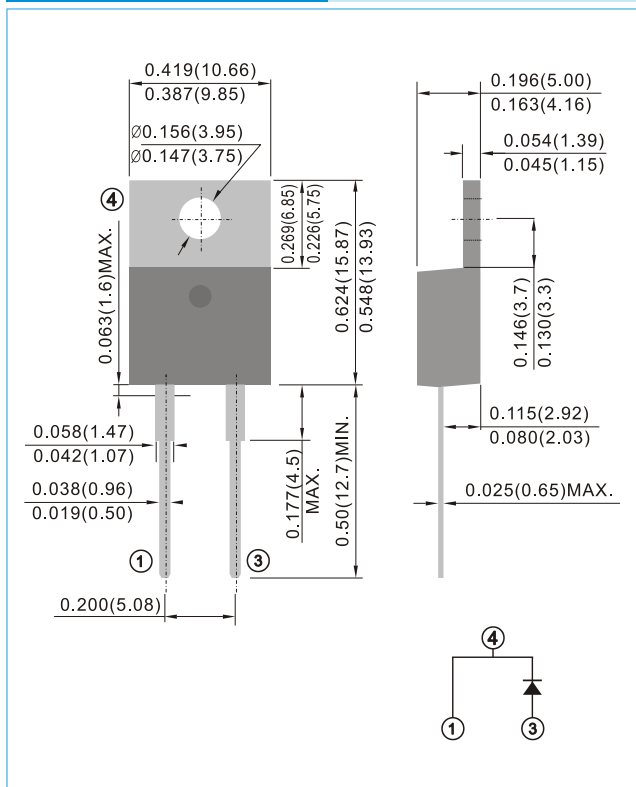
ORDER INFORMATION

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

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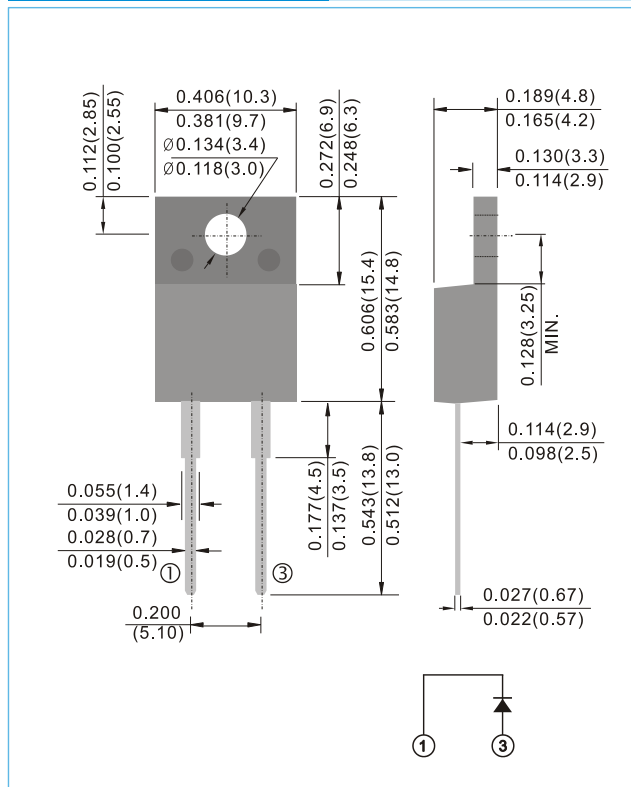
TO-220AC

Unit : inch(mm)



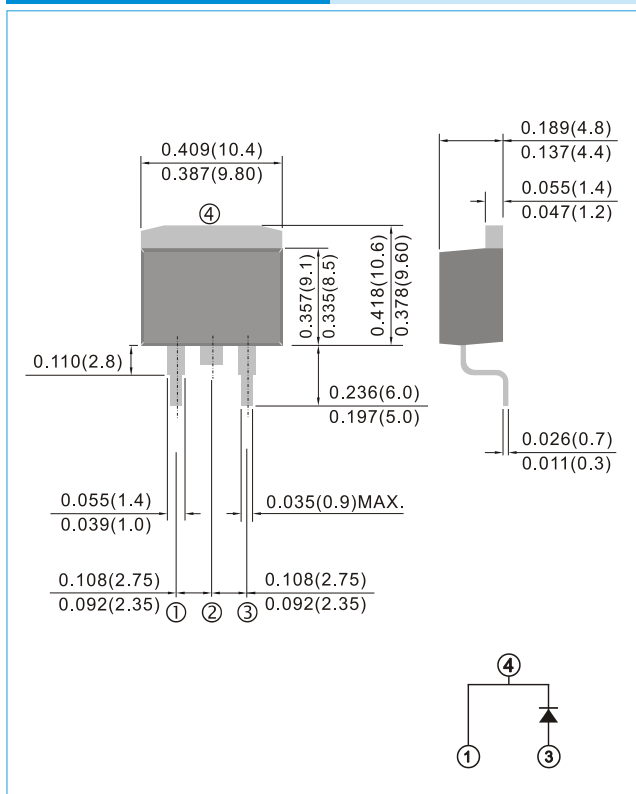
ITO-220AC

Unit : inch(mm)



TO-263 / D²PAK

Unit : inch(mm)



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Part No_packing code_Version

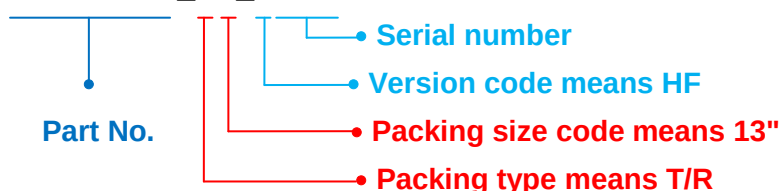
QRT812_T0_00001

QRT812F_T0_00001

QRT812D_R2_00001

For example :

RB500V-40_R2_00001



Packing Code XX				Version Code XXXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th 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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