



# QR60C06RT

## PLANAR STRUCTURED SUPERFAST RECOVERY RECTIFIERS

**Voltage** 600 V **Current** 60 A

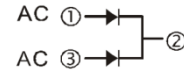
### Features

- Planar structure with EPI wafer
- For PFC (DCM/CrCM) operation
- Low  $V_F$  and soft recovery
- Low leakage current
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case: TO-3PL molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0183 ounces, 5.175 grams

TO-3PL



### Maximum Ratings and Thermal Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Maximum Recurrent Peak Reverse Voltage		$V_{RRM}$	600	V
Maximum RMS Voltage		$V_{RMS}$	420	V
Maximum DC Blocking Voltage		$V_{DC}$	600	V
Maximum Average Forward Rectified Current	per diode	$I_{F(AV)}$	30	A
	per device		60	
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load per diode		$I_{FSM}$	200	A
Typical Thermal Resistance per diode		$R_{\theta JC}^{(1)}$	2	$^\circ\text{C/W}$
Operating Junction Temperature Range		$T_J$	-55~175	$^\circ\text{C}$
Storage Temperature Range		$T_{STG}$	-55~175	$^\circ\text{C}$



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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Instantaneous forward voltage	$V_F$	$I_F = 1\text{ A}, T_J = 25^\circ\text{C}$	-	0.86	-	V
		$I_F = 7.5\text{ A}, T_J = 25^\circ\text{C}$	-	1.21	-	
		$I_F = 30\text{ A}, T_J = 25^\circ\text{C}$	-	1.57	2.2	
		$I_F = 1\text{ A}, T_J = 125^\circ\text{C}$	-	0.62	-	
		$I_F = 7.5\text{ A}, T_J = 125^\circ\text{C}$	-	0.95	-	
		$I_F = 30\text{ A}, T_J = 125^\circ\text{C}$	-	1.37	-	
Reverse current	$I_R$	$V_R = 600\text{ V}, T_J = 25^\circ\text{C}$	-	-	3	uA
		$V_R = 600\text{ V}, T_J = 125^\circ\text{C}$	-	6.7		
Reverse recovery time	$T_{RR}$	$I_F = 0.5\text{ A}, I_R = 1\text{ A},$ $I_{RR} = 0.25\text{ A}, T_J = 25^\circ\text{C}$	-	-	45	ns
		$I_F = 1\text{ A}, V_R = 30\text{ V},$ $di/dt = 100\text{ A/us},$ $T_J = 25^\circ\text{C}$	-	28	35	
		$I_F = 30\text{ A}, V_R = 400\text{ V},$ $di/dt = 200\text{ A/us},$ $T_J = 25^\circ\text{C}$	-	65	-	
Peak recovery current	$I_{RRM}$	$I_F = 30\text{ A}, V_R = 400\text{ V},$ $di/dt = 200\text{ A/us},$ $T_J = 25^\circ\text{C}$	-	4.6	-	A
Reverse recovery charge	$Q_{RR}$	$I_F = 30\text{ A}, V_R = 400\text{ V},$ $di/dt = 200\text{ A/us},$ $T_J = 25^\circ\text{C}$	-	192	-	nC

**NOTES:**

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



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## TYPICAL CHARACTERISTIC CURVES

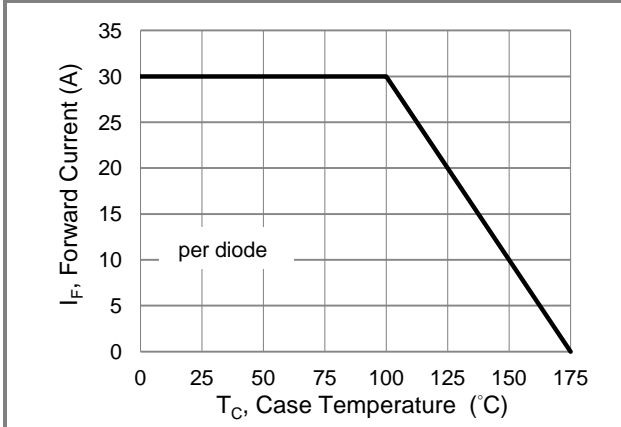


Fig.1 Forward Current Derating Curve

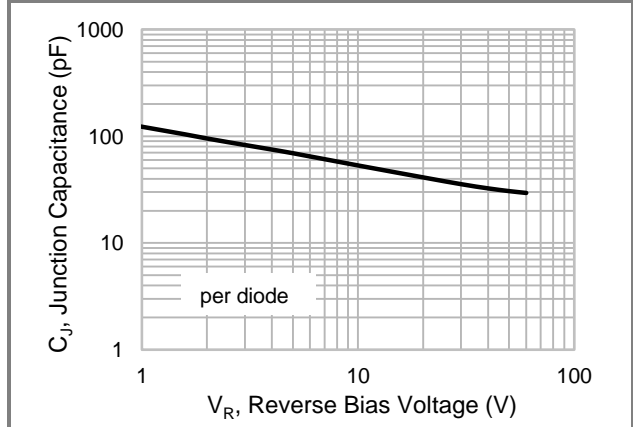


Fig.2 Typical Junction Capacitance

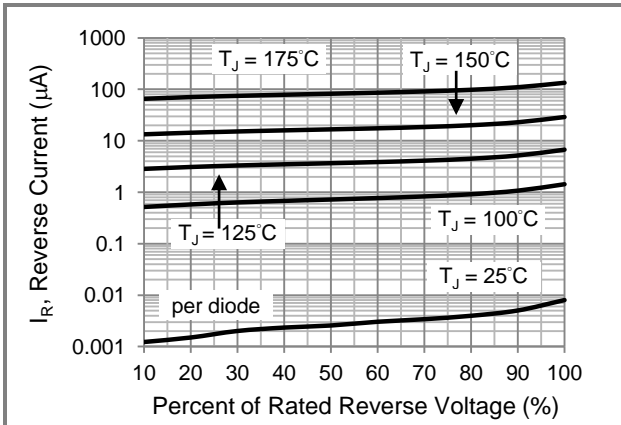


Fig.3 Typical Reverse Characteristics

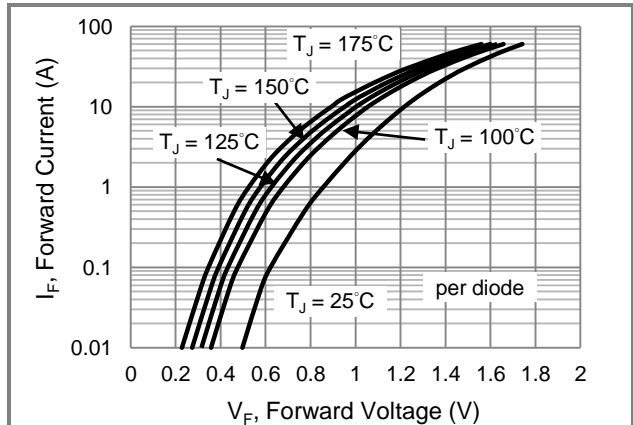


Fig.4 Typical Forward Characteristics

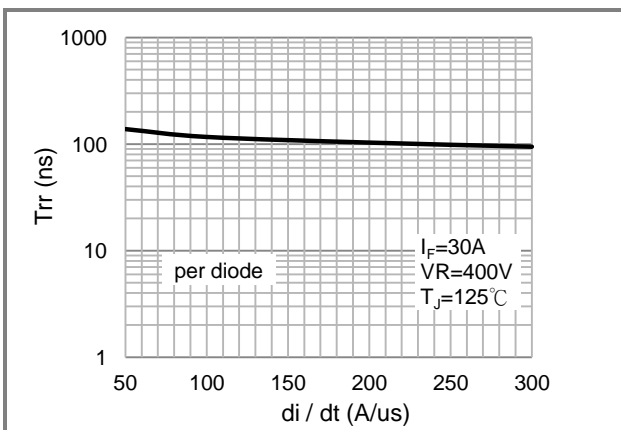


Fig.5 Typical Reverse recovery time versus di/dt

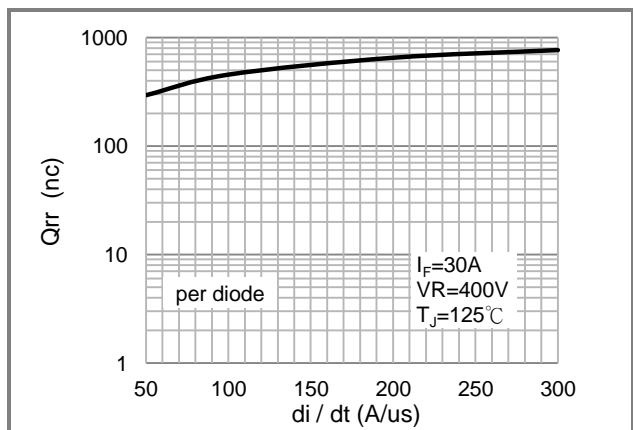


Fig.6 Typical Reverse recovery charges versus di/dt

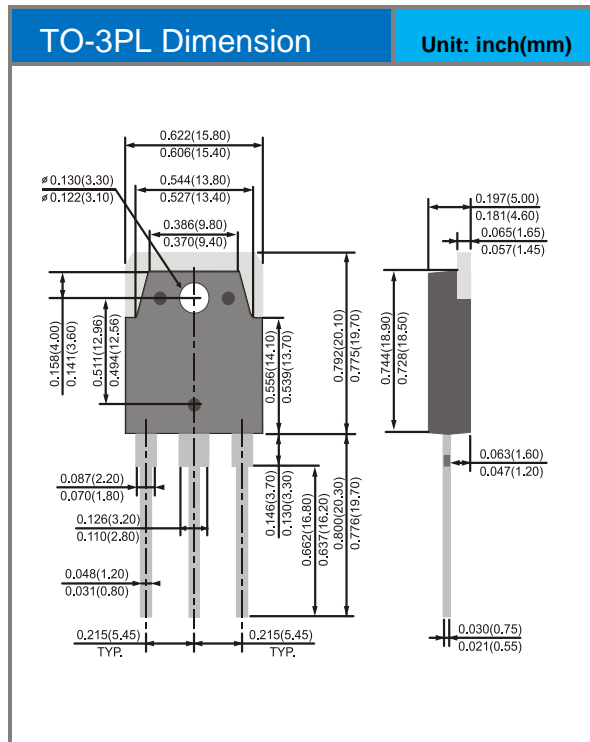


# QR60C06RT

## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
QR60C06RT_T0_00001	TO-3PL	30pcs / tube	QR60C06RT	Halogen free

## Packaging Information & Mounting Pad Layout





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