



QR3006RT

PLANAR STRUCTURED SUPERFAST RECOVERY RECTIFIERS

VOLTAGE 600 Volt **CURRENT** 30 Ampere

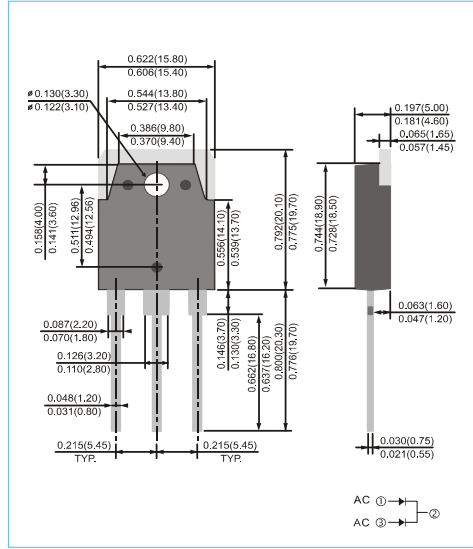
TO-3PL Unit : inch(mm)

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
- Exceeds environmental standards of MIL-S-19500/228
- Lead free in compliance with EU RoHS 2011/65/EU directive

MECHANICAL DATA

- Case: TO-3PL package
- Terminals: Lead solderable per MIL-STD-750, Method 2026
- Weight: 0.182 ounces, 5.174 grams



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 30	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode	I _{FSM}	200	A
Typical thermal resistance (Note 1)	R _{θJC}	2	°C/W
Operating junction temperature range	T _J	-55 to + 150	°C
Storage temperature range	T _{STG}	-55 to + 150	°C

NOTE :

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



QR3006RT

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	-	0.86	-	V
		I _F =5A	-	1.13	-	
		I _F =15A	-	1.37	1.65	
		T _J =25°C	-	-	-	-
		I _F =1A	-	0.62	-	V
		I _F =5A	-	0.86	-	
		I _F =15A	-	1.13	1.35	
T _J =125°C	-	-	-	-	-	
Reverse leakage current	I _R	V _R =600V	-	-	3	μA
		T _J =25°C	-	-	100	
Reverse recovery time	T _{RR}	I _F =0.5A	-	-	45	ns
		I _R =1A	-	-	-	
		I _{RR} =0.25A	-	-	-	
		T _J =25°C	-	-	-	-
		I _F =1A	-	-	35	ns
		V _R =30V	-	-	-	
		di/dt=100A/μs	-	-	-	
		I _F =15A	-	50	-	ns
		V _R =400V	-	-	-	-
		di/dt=200A/μs	-	-	-	-
Peak recovery current	I _{RRM}	I _F =15A	-	3.5	-	A
		V _R =400V	-	-	-	-
		di/dt=200A/μs	-	-	-	-
Reverse recovery charge	Q _{RR}	I _F =15A	-	85	-	nC
		V _R =400V	-	-	-	-
		di/dt=200A/μs	-	-	-	-



QR3006RT

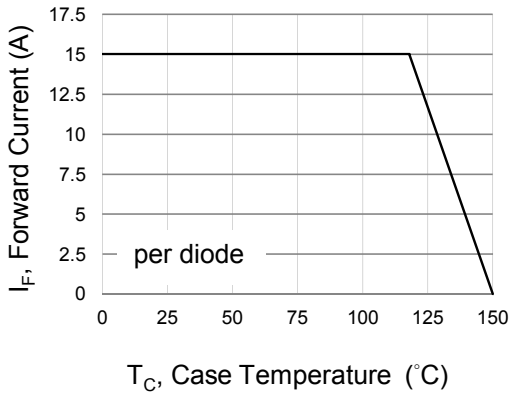


Fig.1 Forward Current Derating Curve

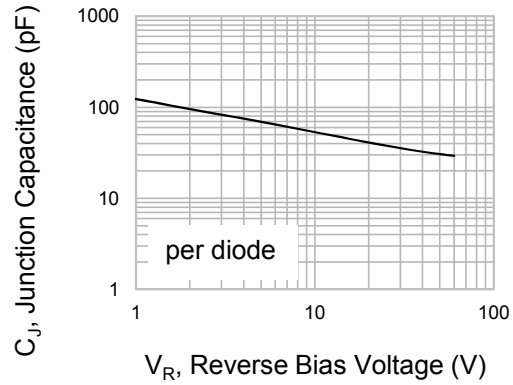


Fig.1 Typical Junction Capacitance

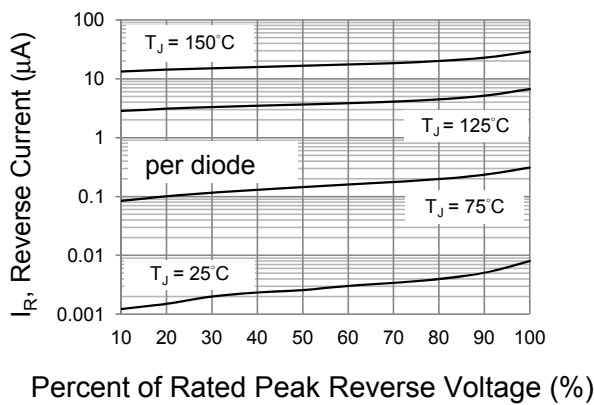


Fig.2 Typical Reverse Characteristics

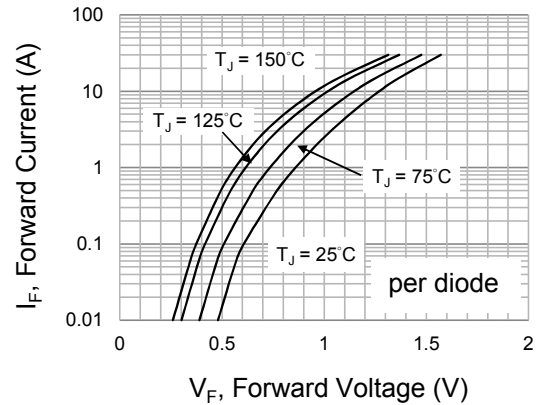


Fig.3 Typical Forward Characteristics

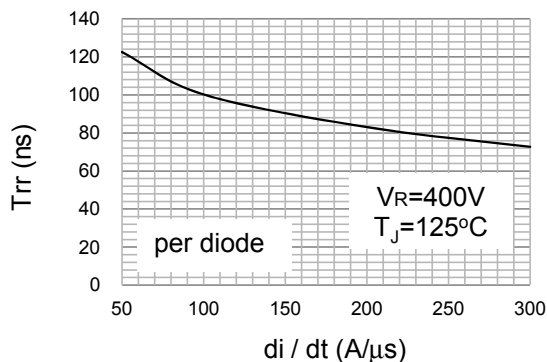


Fig.4 Typical Reverse recovery time versus di/dt

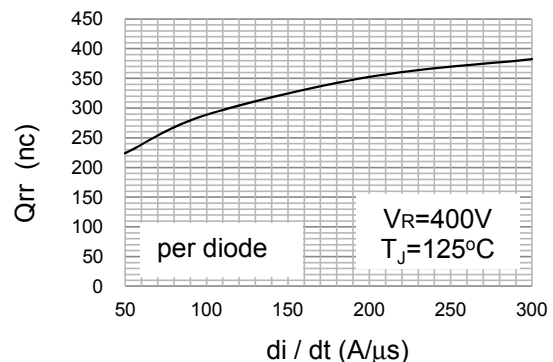


Fig.5 Typical Reverse recovery charges versus di/dt