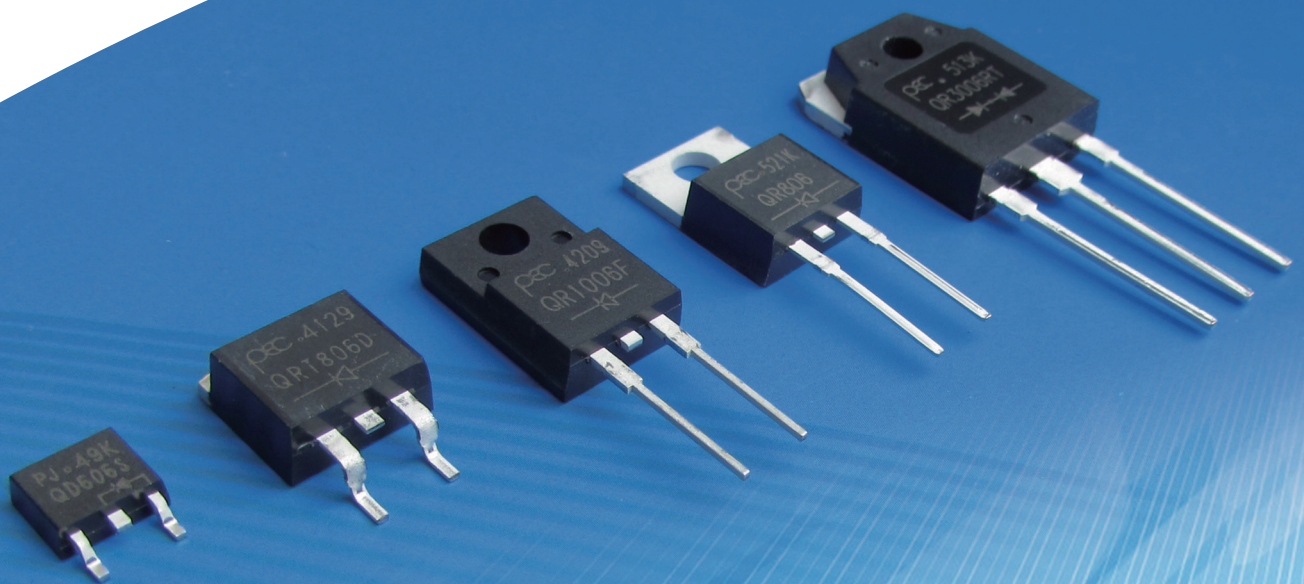


PANJIT FAST RECOVERY EPITAXIAL DIODES

QR, QRT Series for DCM, CRM And CCM Power Factor Correction

MUR series for TV power, LED lighting, HID.....



SOFT RECOVERY RECTIFIERS

PanJit's FRED (Fast Recovery Epitaxial Diodes) devices have the industry lowest I_R (3 μ A) that allow a maximum junction temperature up to 175 °C. By having soft recovery and low Q_{RR} , it is able to reduce the EMI and improve the performance. FRED devices have two type of standard type and low T_{RR} type to correspond different PFC operation modes.

FRED Features and Applications

- Best trade-off on V_F & T_{RR}
- Soft Recovery Switching
- Low Leakage Current
- QR Series (Standard) is suitable for DCM/CRCM
- QRT Series (Low T_{RR}) is suitable for CRCM/CCM

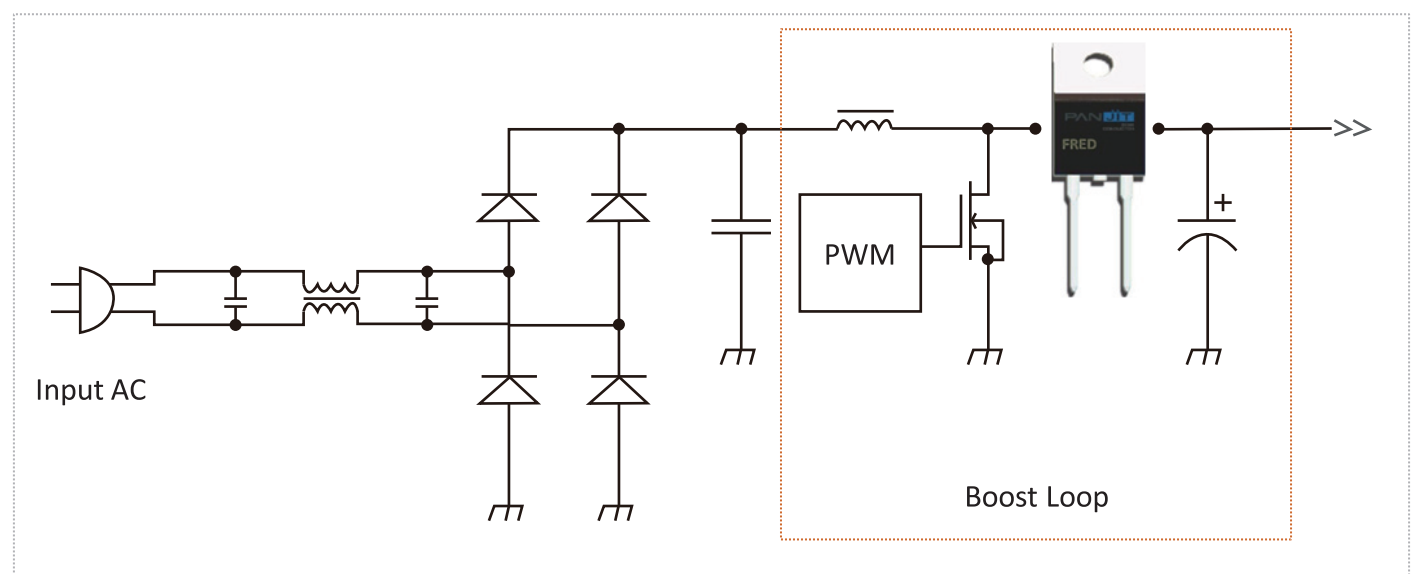
Power Factor & Total Harmonic Distortion Regulatory Drivers

- China-CCC (China compulsory Certificate)
- Japan-JIC-C-61000-3-2
- UK-BSEN 61000-3-2
- Europe-EN61000-3-2/EN61000-3-2
- America-80 PLUS

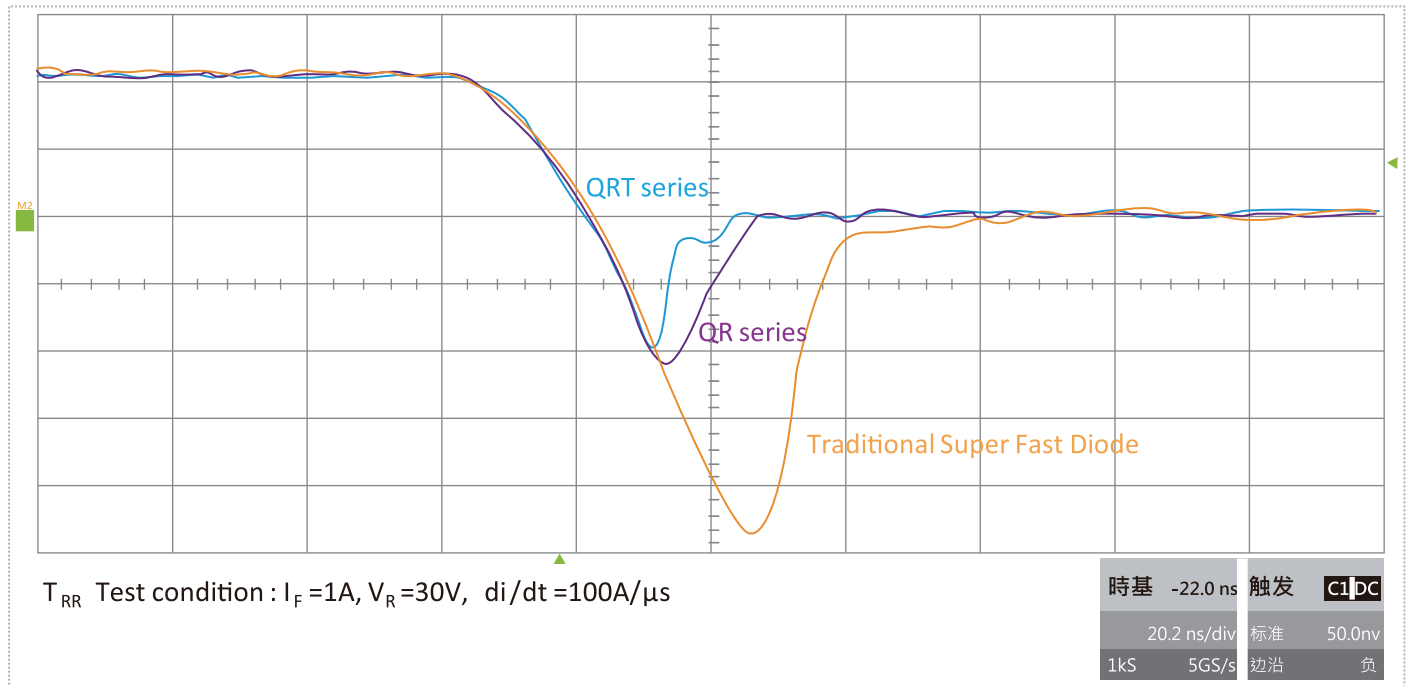
Boost PFC Converter Operation Mode - DCM, CRM, CCM

- A boost converter can operate in two modes: Continuous Conduction Mode(CCM) or Discontinuous Conduction Mode(DCM). The mode is defined by the current flowing into the boost inductor.
- DCM - Suitable for low to medium power applications due to reduced switching losses.
(forward voltage is a critical parameter)
- CRM - Border mode operation combine high efficiency maximizing the usage of inductive elements.
- CCM - Better suited for medium to high power applications. Peak current is lower which reduces Switching losses and requires lower filtering (reverse recovery charge is a critical parameter)

Active Boost PFC Circuit



FRED and Traditional Super Fast Diode T_{RR} & Q_{RR} Waveform Comparison



FRED Package Matrix

Type	Rating	Structure	TO-220AC 	ITO-220AC 	TO-263 	TO-252
QR Series (Standard)	4A 600V	Single Die	QR406	QR406F	QR406D	QD406S
	6A 600V	Single Die	QR606	QR606F	QR606D	QD606S
	8A 600V	Single Die	QR806	QR806F	QR806D	
	10A 600V	Single Die	QR1006	QR1006F	QR1006D	
	15A 600V	Single Die	QR1506	QR1506F	QR1506D	
QRT Series (Low T_{RR})	8A 600V	Single Die	QRT8A06	QRT8A06F	QRT8A06D	QDT8A06S
	10A 600V	Single Die	QRT10A06	QRT10A06F	QRT10A06D	

Application	Part Number	V _{BR} (V)	I _F (A)	I _R (μ A)	V _F (V)	T _{RR} (ns)	Q _{RR} (nC)	Package
QR Series is suitable for DCM/CRM								
Adapter TV Power PC Power LED Lighting	QR406	600	4	3	< 1.45 (1.18)	< 35 (30)	(24.3)	TO-220AC
	QR406F							ITO-220AC
	QR406D							TO-263
	QD406S							TO-252
	QR606	600	6	3	< 1.45 (1.28)	< 35 (29)	(20.9)	TO-220AC
	QR606F							ITO-220AC
	QR606D							TO-263
	QD606S							TO-252
	QR806	600	8	3	< 1.65 (1.26)	< 35 (23)	(15.1)	TO-220AC
	QR806F							ITO-220AC
	QR806D							TO-263
	QR1006	600	10	3	< 1.55 (1.26)	< 35 (26)	(19.2)	TO-220AC
	QR1006F							ITO-220AC
	QR1006D							TO-263
	QR1506	600	15	3	< 1.65 (1.28)	< 35 (24)	(15.7)	TO-220AC
	QR1506F							ITO-220AC
QR1506D	TO-263							
QRT Series is suitable for CRM/CCM								
UPS PC Power LED Lighting Telecom Power	QRT8A06	600	8	1	< 2.4 (2.21)	< 20 (15.2)	(8.1)	TO-220AC
	QRT8A06F							ITO-220AC
	QDT8A06S							TO-252
	QRT8A06D							TO-263
	QRT10A06	600	10	1	< 2.4 (2.25)	< 20 (14.67)	(7.23)	TO-220AC
	QRT10A06F							ITO-220AC
	QRT10A06D							TO-263

T_{RR}/Q_{RR} : I_F=1A, di/dt=100A/ μ s, V_R=30V

() Refers to typical value

MUR series is based on a mesa doping technology which allows a maximum junction temperature up to 175°C. With the features of delivering highly flexible V_F/T_{RR} ratio and high capability/price ratio, wide current ratings from 1A to 20A, MUR series could be assembled in SMT, Axial and TO packages. MUR series is recommended to be designed in TV power, LED lighting, HID and applications with the demand for high frequency rectifier.

I_F (A)	Part Number	V_{RRM} (V)	T_{RR} (ns)	I_{FSM} (A)	$V_F@I_F$		$I_R@V_{RRM}$ (μ A)	Package
					(V)	(A)		
1	MURA1J	600	50	30	1.25	1	5	SMA
	MURB1J	600	50	30	1.25	1	5	SMB
	MUR160K	600	50	30	1.25	1	5	DO-41
2	MURA2J	600	50	30	1.35	2	5	SMA
	MURB2J	600	50	30	1.35	2	5	SMB
	MUR260K	600	50	30	1.35	2	5	DO-41
3	MURC3J	600	50	80	1.25	3	5	SMC
	MURB3J	600	50	80	1.25	3	5	SMB
	MUR360M	600	50	80	1.25	3	5	DO-201AD
4	MURC4JI	600	50	80	1.28	4	5	SMC
	MURC4J	600	50	110	1.28	4	5	SMC
	MUR460IM	600	50	80	1.28	4	5	DO-201AD
	MUR460M	600	50	110	1.28	4	5	DO-201AD
5	MURC5J	600	50	110	1.3	5	5	SMC
	MUR560M	600	50	110	1.3	5	5	DO-201AD
	MUR560S	600	50	110	1.3	5	5	TO-252
8	MUR860	600	50	100	1.5	8	5	TO-220AC
	MUR860F	600	50	100	1.5	8	5	ITO-220AC
	MUR860D	600	50	100	1.5	8	5	TO-263
	MUR860S	600	50	100	1.5	8	5	TO-252
10	MUR1060	600	50	125	1.5	10	5	TO-220AC
	MUR1060F	600	50	125	1.5	10	5	ITO-220AC
	MUR1060D	600	50	125	1.5	10	5	TO-263
15	MUR1560	600	50	150	1.5	15	5	TO-220AC
	MUR1560F	600	50	150	1.5	15	5	ITO-220AC
	MUR1560D	600	50	150	1.5	15	5	TO-263
16	MUR1660DC	600	50	100	1.5	8	5	TO-263
	MUR1660CT	600	50	100	1.5	8	5	TO-220AB
	MUR1660FCT	600	50	100	1.5	8	5	ITO-220AB
20	MUR2060CT	600	50	125	1.5	10	5	TO-220AB
	MUR2060FCT	600	50	125	1.5	10	5	ITO-220AB
	MUR2060DC	600	50	125	1.5	10	5	TO-263

Reverse Recovery Test Conditions : $I_F=0.5A$, $I_R=1A$, Recover to 0.25A

 **Your component . Our profession**