

Rectifiers

D2412 Series D2412-R Series



12-A, 50-to-600-V, Fast-Recovery Silicon Rectifiers

General-Purpose Types for Medium-Current Applications

Available in reverse-polarity versions: D2412A-R, D2412B-R, D2412C-R, D2412D-R, D2412F-R, D2412M-R

Voltage	50 V	100 V	200 V	300 V	400 V	600 V
Package	Туре	Type	Туре	Type	Туре	Туре
DO-4	D2412F (43889)	D2412A (43890)	D2412B (43891)	D2412C (43892)	D2412D (43893)	D2412M (43894)

Numbers in parentheses are former RCA type numbers.

RCA D2412 series and D2412-R series are diffused-junction silicon rectifiers in a stud-type hermetic package. These devices differ only in their voltage ratings.

All types feature fast reverse-recovery time, with "soft" recovery characteristics that reduce the generation of RFI and voltage transients.

These devices are intended for use in high-speed inverters, choppers, high-frequency rectifiers, "free-wheeling" diode circuits, and other high-frequency applications.

MAXIMUM RATINGS, Absolute-Maximum Values:

Features:

- Fast reverse-recovery time (t_{rr}) —
- 0.35 μs max. (I_{FRM} = 38 A peak, see test circuit Fig. 1)
- 0.2 μ s max. (I_F = 1 A, I_{RM} = 2 A max., see test circuit Fig. 2)
- Low reverse-recovery current
- Low forward-voltage drop
- Low-thermal-resistance hermetic package

D2412F D2412A D2412B D2412C D2412D D2412M D2412F D2412A D2412B D2412C D2412D D2412A D2412A D2412C D2412D D2412A D2

REVERSE VOLTAGE:		D2412F-R	D2412A-R	D2412B-R	D2412C-H	D2412D-H	D2412M-R	
Repetitive peak	VRRM	50	100	200	300	400	600	v
Non-repetitive peak	VRSM	100	200	300	400	600	800	v
FORWARD CURRENT (Conduction angle = 180 ⁰ ,								
half sine wave):								
RMS (T _C = 100 ^o C) [®]	IF(RMS	5) —			18			А
Average (T _C = 100 ⁰ C) ⁰	lo	_			12			A
Peak-surge (non-repetitive):	ICCM							
At junction temperature $(T_1) = 150^{\circ}C$:	1-214							
For one-half cycle of applied voltage, 60 Hz (8.3 ms)					250			А
For other durations		-			Fig.3			
Peak (repetitive)	IFRM				50			Α
STORAGE-TEMPERATURE RANGE					to 165	·····		°c
OPERATING (JUNCTION) TEMPERATURE				· · · · · · · · · · · · · · · · · · ·	50			°c
STUD TORQUE:								
Recommended					15		ir	n-lb
Maximum (DO NOT EXCEED)					25		ir	n-Ib

Case temperature is measured at center of any flat surface on the hexagonal head of the mounting stud.







Fig.2 - Test circuit (pulsed dc) for measurement of reverse-recovery time.

ELECTRICAL CHARACTERISTICS

		LI	UNITS	
CHARACTERISTIC	SYMBOL	ALL		
		MIN.	MAX.	
Reverse Current:				
Static				
For V _{RRM} = max. rated value, I _F = 0, T _C = 25 ^o C · · · · · ·	IRM	-	100	μA
T _C = 100 ^o C · · · · · ·		-	4	mA
Instantaneous Forward Voltage Drop:				
At i _F = 12 A, T _J = 25 ^o C	٧F	-	1.4	v
Reverse Recovery Time:				
For circuit shown in Fig. 1, at			ļ	
IFM = 38 A, -diF/dt = 25 A/µs,				
pulse duration = 4.5 µs, T _C = 25 ⁰ C	trr	-	0.35	μs
For circuit shown in Fig. 2, at				
I _{FM} = 1 A, I _{RM} = 2 A max., T _C = 25 ^o C		-	0.2	
Thermal Resistance (Junction-to-Case)	^R θJC	-	1.5	°C/W









voltage drop.



