Rectifiers



D2406 Series D2406-R Series



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

General-Purpose Types for Medium-Current Applications

Available in reverse-polarity versions: D2406A-R, D2406B-R, D2406C-R, D2406D-R, D2406F-R, D2406M-R

Voltage	50 V	100 V	200 V	300 V	400 V	600 V
Package	Types	Types	Types	Types	Types	Types
DO-4	D2406F (43879)	D2406A (43880)	D2406B (43881)	D2406C (43882)	D2406D (43883)	D2406M (43884)

Numbers in parentheses are former RCA type numbers.

RCA D2406 series and D2406-R series are diffusedjunction 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.

Features:

- Fast reverse-recovery time (t_{rr}) –
 0.35 μs max. (I_{FRM} = 19 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

MAXIMUM RATINGS, Absolute-Maximum Values:

		D2406F	D2406A	D2406B	D2406C	D2406D	D2406M	
		D2406F-R	D2406A-R	D2406B-R	D2406C-R	D2406D-R	D2406M-R	
REVERSE VOLTAGE:								
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 ^o , half sine wave):								
RMS (T _C) = 100°C)●	F(RMS) —			9			А
Average (T _C = 100 ^o C)●	10	· _		·	6			А
Peak-surge (non-repetitive): At junction temperature $(T_i) = 150^{\circ}C$:	IFSM							
For one-half cycle of applied voltage, 60 Hz (8.3 ms)		<u></u>			125			А
For other durations		_		See	Fig.3			
Peak (repetitive)	IFRM				25			А
STORAGE-TEMPERATURE RANGE					to 165		(°C
OPERATING (JUNCTION) TEMPERATURE					150		'	°C
STUD TORQUE:								
Recommended					15		in	-lb
Maximum (DO NOT EXCEED)					25		—— in	-lb

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

		LIMITS		UNITS
CHARACTERISTIC	SYMBOL	ALL		
		MIN.	MAX.	
Reverse Current:				
Static				
For V _{RRM} = max. rated value, $I_F = 0$, $T_C = 25^{\circ}C$ · · · · · ·	IRM	-	15	μA
T _C = 100 ^o C		-	3	mA
Instantaneous Forward Voltage Drop:				
At i _F 6 A, T _J = 25 ^o C	۷F	-	1.4	v
Reverse Recovery Time:				
For circuit shown in Fig. 1, at				
IFM = 19 A, -diF/dt = 25 A/µs,				
pulsed duration = 2.25 μs, T _C = 25 ^o C	trr	-	0.35	μs
For circuit shown in Fig. 2, at				
$I_{FM} = 1 \text{ A}, I_{RM} = 2 \text{ A} \text{ max.}, T_C = 25^{\circ}C.$		-	0.2	
Thermal Resistance (Junction-to-Case)	^R θJC	-	3	°C/W









Fig.4 – Forward current vs. forward voltage drop.



