International
IOR Rectifier

PD - 2.490

Provisional Datasheet

30BQ015

SCHOTTKY RECTIFIER

3 Amp

Major Ratings and Characteristics

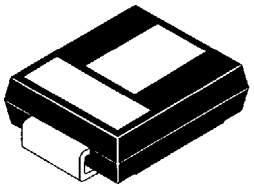
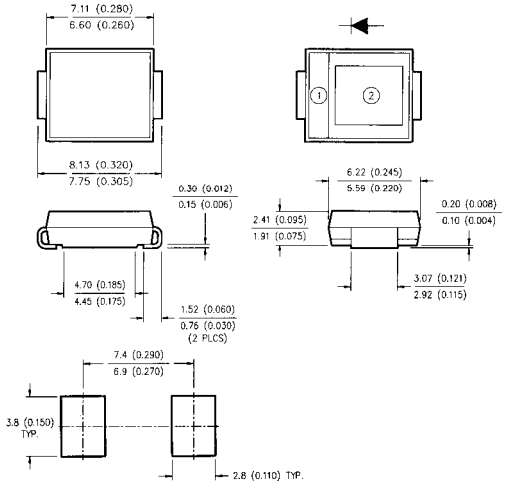
Characteristics	30BQ015	Units
$I_{F(AV)}$ Rectangular waveform	3.0	A
V_{RRM}	15	V
I_{FSM} @ tp = 5µs sine	650	A
V_F @ 3.0Apk, T_J = 75°C	0.30	V
T_J	-55 to 100	°C

Description / Features

The 30BQ015 surface-mount Schottky rectifier has been designed for applications requiring very low forward drop and small foot prints on PC boards. Typical applications are in disk drives, switching power supplies, converters, free-wheeling diodes, battery charging and reverse battery protection.

- Small footprint, surface mountable
- Very low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long-term reliability

SMC

CASE STYLE	CASE OUTLINE
	

Voltage Ratings

Part number		30BQ015
V_R	Max. DC Reverse Voltage (V)	15
V_{RWM}	Max. Working Peak Reverse Voltage (V)	25

Absolute Maximum Ratings

	Parameters	30BQ	Units	Conditions	
$I_{F(AV)}$	Max. Average Forward Current	3.0	A	50% duty cycle @ T_C = 83°C, rectangular waveform	
		4.0		50% duty cycle @ T_C = 78°C, rectangular waveform	
I_{FSM}	Max. Peak One Cycle Non - Repetitive	650	A	5µs Sine or 3µs Rect. pulse	Following any rated load condition
	Surge Current	95		10ms Sine 0r 6ms Rect. pulse	and with rated V_{RRM} applied.
E_{AS}	Non - Repetitive Avalanche Energy	9	mJ	T_J = 25°C, I_{AS} = 0.6A, L = 6.6mH	
I_{AR}	Repetitive Avalanche Current	0.6	A	Current decaying linearly to zero in 1µsec Frequency limited by T_J max. V_A = 1.5 X V_R typical	

Electrical Specifications

Parameters		30BQ	Units		Conditions
V_{FM}	Max. Forward Voltage Drop ①	0.35	V	@ 3.0A	T_J = 25°C
			V	@ 6.0A	
		0.30	V	@ 3.0A	T_J = 75°C
			V	@ 6.0A	
I_{RM}	Max. Reverse Leakage Current ①	4	mA	T_J = 25°C	V_R = rated V_R
		50	mA	T_J = 125°C	
C_T	Max. Junction Capacitance	1120	pF	V_R = 5V_{DC}, (test signal range 100KHz to 1MHz) 25°C	
L_S	Typical Series Inductance	3.0	nH	Measured lead to lead 5mm from package body	
dv/dt	Max. Voltage Rate of Change (Rated V_R)	10,000	V/µs		

Thermal-Mechanical Specifications

	Parameters	30BQ	Units	Conditions
T_J	Max.Junction Temperature Range	-55 to 100	°C	
T_{STG}	Max. Storage Temperature Range	-55 to 100	°C	
R_{thJA}	Max. Thermal Resistance, Junction to Ambient	12	°C/W	DC operation
R_{thJL}	Max. Thermal Resistance, Junction to Lead ②	46	°C/W	DC operation
wt	Approximate Weight	0.24	g	
	Case Style	SMC		Similar to DO-214AB

① Pulse Width < 300µs, Duty Cycle < 2%

② Mounted 1 inch square PCB, thermal probe connected to lead 2mm from package

Refer to the Appendix Section for the following:

Appendix D: Tape and Reel Information — See page 339.