

**Solid State Devices, Inc.**

14701 Firestone Blvd * La Mirada, Ca 90638
 Phone: (562) 404-4474 * Fax: (562) 404-1773
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**SPD645-1 thru SPD649-1
 and
 SPD645-1SMS thru SPD649-1SMS**

Designer's Data Sheet**Part Number/Ordering Information ^{1/}****SPD**

_ _ _

L Screening ^{2/}

_ = Not Screened

TX = TX Level

TXV = TXV

S = S Level

L Package Type

_ = Axial Leaded

SMS = Surface Mount Square Tab

L Voltage/Family

645-1 = 225V

646-1 = 300V

647-1 = 400V

648-1 = 500V

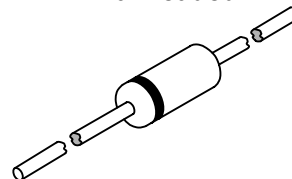
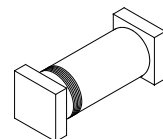
649-1 = 600V

400 mAMPS**225 — 600 VOLTS****STANDARD RECOVERY
RECTIFIER****FEATURES:**

- Standard Reverse Recovery (Faster Versions Available)
- V_R to 600 Volts (Higher Voltages Available)
- Hermetically Sealed Glass Package
- Metallurgically Bonded
- High Surge Capability
- No Thermal Fatigue
- Available in Axial & Square Tab Versions
- TX, TXV, and S-Level Screening Available ^{2/}
- Replacement for: 1N645-1, UR-1 thru 1N649-1, UR-1

MAXIMUM RATINGS ^{3/}

RATING		SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage And DC Blocking Voltage	645-1	V_{RRM}	225	Volts
	646-1		300	
	647-1	V_{RWM}	400	
	648-1	V_R	500	
	649-1		600	
Average Rectified Forward Current	$T_A = 25^\circ\text{C}$	I_{O1}	400	mAmps
	$T_A = 150^\circ\text{C}$	I_{O2}	150	
Power Dissipation (at 3/8" from the body, $T_L = 75^\circ\text{C}$)		P_{tot}	600	mWatts
Surge Current ($T_A = 25^\circ\text{C}$ to 150°C , for 1 Second)		I_{FSM}	3	Amps
Operating & Storage Temperature		T_O and T_{STG}	-65 to +175	$^\circ\text{C}$
Thermal Impedance		Z_{qJX}	35	$^\circ\text{C/W}$

NOTES:**1/** For Ordering Information, Price, Operating Curves, and Availability- Contact Factory.**2/** Screened to MIL-PRF-19500.**3/** Unless Otherwise Specified, All Electrical Characteristics @25°C.**Axial Leaded****SMS**

NOTE: All specifications are subject to change without notification.
 SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: RC0109A**DOC**



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and
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ELECTRICAL CHARACTERISTICS ^{3/}

CHARACTERISTICS		SYMBOL	VALUE	UNIT
Minimum Breakdown Voltage (100 μ A)	645-1	B_V	275	Volts
	646-1		360	
	647-1		480	
	648-1		600	
	649-1		720	
Maximum Forward Voltage Drop (I _F = 400mA)		V_F	1.0	Volts
Maximum Reverse Leakage Current (Rated V _R , T _A = +25°C)		I_{R1}	200	nA
Maximum Reverse Leakage Current (Rated V _R , T _A = +100°C)	645-1	I_{R2}	15	μ A
	646-1		15	
	647-1		20	
	648-1		20	
	649-1		25	
Typical Junction Capacitance (-12 V)		C_O	9	pF

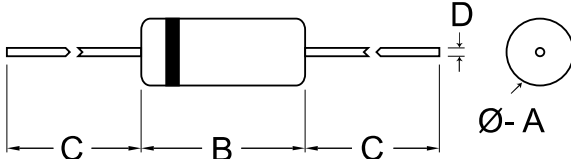
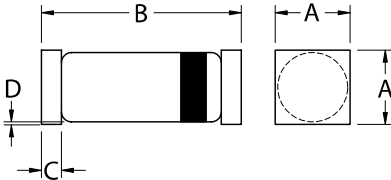
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2/ Screened to MIL-PRF-19500.

3/ Unless Otherwise Specified, All Electrical Characteristics @25°C.

Package Outlines:

DIMENSIONS (inches)			DIMENSIONS (inches)		
DIM.	Minimum	Maximum	DIM	Minimum	Maximum
A	.060	.090	A	.098	.102
B	.120	.200	B	.170	.250
C	1.00	---	C	.022	.028
D	.018	.022	D	.002	---
AXIAL 			SMS 		

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