DIOTEC ELECTRONICS CORP.
18020 Hobart Blvd., Unit B
Gardena, CA 90248 U.S.A
Tel.: (310) 767-1052 Fax: (310) 767-7958

Data Sheet No. SESA-1201-1B

12 AMP SUPER-EFFICIENT RECTIFIERS

FEATURES

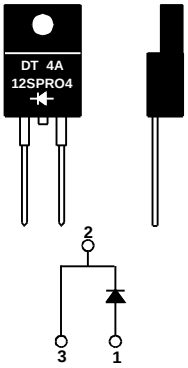
- Glass Passivated for high reliability/temperature performance
- Low switching noise
- Low forward voltage drop
- Low thermal resistance
- High switching capability
- High surge capability

MECHANICAL DATA

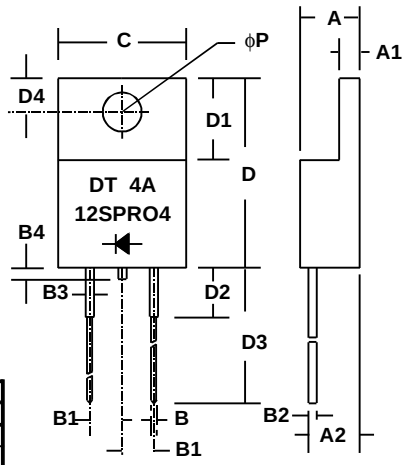
- Case: TO-220 molded plastic (Full Insulated)
  (U/L Flammability Rating 94V-0)
- Terminals: Rectangular pins w/ standoff
- Solderability: Per MIL-STD 202 Method 208 guaranteed
- Polarity: Diode depicted on product
- Mounting Position: Any
- Weight: 0.06 Ounces (1.7 Grams)

MECHANICAL SPECIFICATION

ACTUAL SIZE OF TO-220AC PACKAGE



FULLY INSULATED PACKAGE



Sym	Minimum		Maximum	
	in	mm	in	mm
A			0.187	4.75
A1	0.121*	4.75*		
A2	0.14*	3.56*		
B	0.035	0.9	0.043	1.1
B1	0.09	2.3	0.102	2.6
B2	0.025*	0.64*		
B3	0.050*	1.27*		
B4			0.04	1.0
C			0.413	10.5
D	0.59	15.0	0.61	15.5
D1	0.262*	6.6*		
D2			0.16	4.0
D3	0.54	13.7	0.60	15.2
D4	0.108*	2.75*		
ϕP	0.126*	3.2*		

*** These dimensions are "Typicals".**

ITO - 220AC

SERIES 12SPR01 - 12SPR05

MAXIMUM RATINGS & ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive loads, derate current by 20%.

PARAMETER (TEST CONDITIONS)	SYMBOL	RATINGS					UNITS
Series Number		12SPR01	12SPR02	12SPR03	12SPR04	12SPR05	
Maximum DC Blocking Voltage	V_{RM}	100	200	300	400	500	VOLTS
Maximum RMS Voltage	V_{RMS}	70	140	210	280	350	
Maximum Peak Recurrent Reverse Voltage	V_{RRM}	100	200	300	400	500	
Average Forward Rectified Current @ Tc = 110 °C	I_O	12					AMPS
Peak Forward Surge Current (8.3mS single half sine wave superimposed on rated load)	I_{FSM}	120					
Maximum Forward Voltage at 12 Amps DC	V_{FM}	1.05		1.20			VOLTS
Maximum Average DC Reverse Current @ Tc = 25 °C At Rated DC Blocking Voltage @ Tc = 100 °C	I_{RM}	10 500					µA
Typical Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.5					°C/W
Typical Junction Capacitance (Note 1)	C_J	45					pF
Maximum Reverse Recovery Time (I_F=8.0A, di/dt=50A/µS, T_J=25°C)	T_{RR}	35		45			nSec
Junction Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150					°C

NOTES: (1) Measured at 1 MHz and an applied reverse voltage of 4 volts.

4.97fsesa12

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12 AMP SUPER EFFICIENT RECTIFIERS

RATING & CHARACTERISTIC CURVES FOR SERIES 12SPR001 - 12SPR05

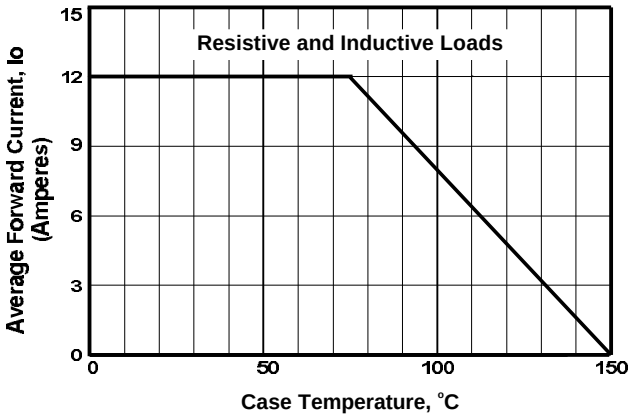


FIGURE 1. FORWARD CURRENT DERATING CURVE

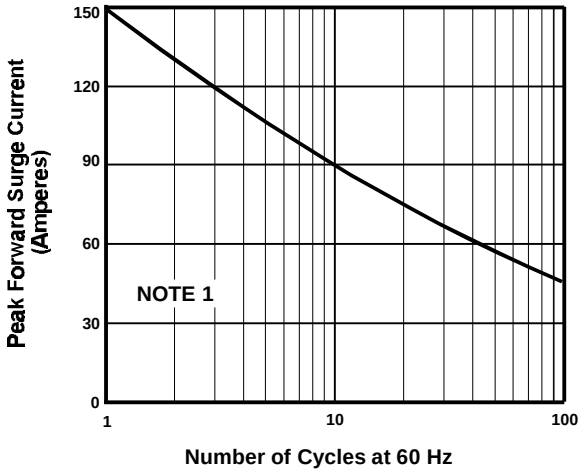


FIGURE 2. MAXIMUM NON-REPETITIVE SURGE CURRENT

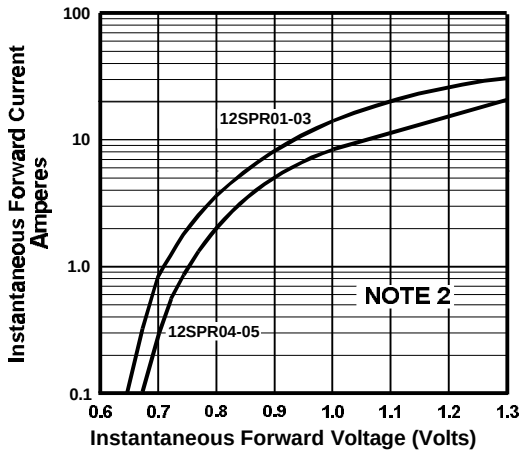


FIGURE 3. TYPICAL FORWARD CHARACTERISTICS

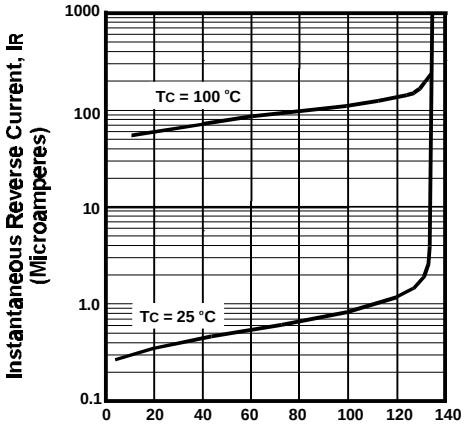


FIGURE 4. TYPICAL REVERSE CHARACTERISTICS

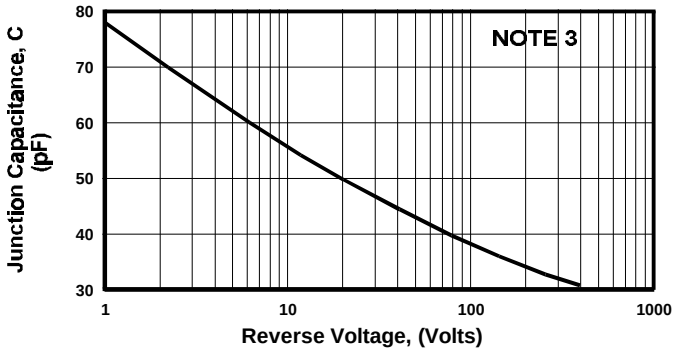


FIGURE 5. TYPICAL JUNCTION CAPACITANCE

NOTES

(1) JEDEC Method, 8.3 mSec. Single Half Sine Wave

(2) T_J = 25 °C, Pulse Width = 300 µSec, 2.0% Duty Cycle

(3) T_C = 25 °C, f = 1 MHz, V_{SIG} = 50 mV P-P