RECTIFIERS
High Efficiency, 16A

SES5501
SES5502
SES5503
SES5504

FEATURES
- Very Low Forward Voltage
- Very Fast Recovery Times
- Economical, Convenient TO-220 Package
- Low Thermal Resistance
- Mechanically Rugged

DESCRIPTION
The SES5500 Series, in the economical, convenient TO-220 package, is specifically designed for operation in power switching circuits to frequencies in excess of 100kHz. The very low forward voltage and very fast recovery time make them particularly suited for switching type power supplies.

ABSOLUTE MAXIMUM RATINGS

Peak Inverse Voltage, SES5501 ..... 50V
Peak Inverse Voltage, SES5502 ..... 100V
Peak Inverse Voltage, SES5503 ..... 150V
Peak Inverse Voltage, SES5504 ..... 200V
Maximum Average D.C. Output Current
@ T_C = 95°C 16A
@ T_A = 25°C 3.3A
@ T_A = 25°C (Note 1) 9.0A
Non-Repetitive Sinusoidal Surge Current, 8.3ms 250A
Thermal Resistance, Junction to Case, θ_{J-C} ..... 1.5°C/W
Thermal Resistance, Junction to Ambient, θ_{J-A} ..... 60°C/W
Operating and Storage Temperature ..... −55°C to +150°C

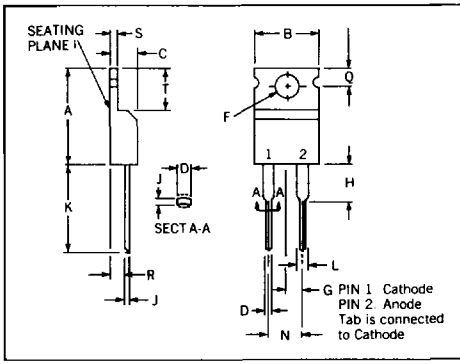
Note: 1. Using Wakefield Type 295 heatsink with convection cooling. For more definitive data refer to the Output Current vs Temperature Curve on this data sheet.

ELECTRICAL SPECIFICATIONS

Type	PIV	Maximum Forward Voltage		Maximum Reverse Current @ PIV		Maximum Reverse Recovery Time*	Typical Forward Recovery Voltage @ 1A t_r = 8ns
		T_J = 25°C	T_J = 100°C	T_J = 25°C	T_J = 100°C		
SES5501 SES5502 SES5503 SES5504	50V 100V 150V 200V	1.025V @ 16A	.945V @ 16A	10μA	800μA	100ns	2.0V

* Measured in circuit I_F = 1/2A, I_R = 1.0A, I_{REC} = 1/4A

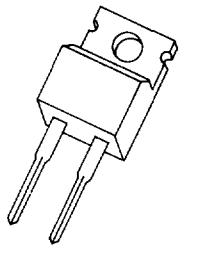
MECHANICAL SPECIFICATIONS



SES5501-SES5504

	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.560	0.625	14.23	15.87
B	0.380	0.420	9.66	10.66
C	0.140	0.190	3.56	4.82
D	0.020	0.045	0.51	1.14
F	0.139	0.147	3.531	3.733
G	0.090	0.110	2.29	2.79
H	–	0.250	–	6.35
J	0.015	0.025	0.38	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.070	1.14	1.77
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.115	2.04	2.92
S	0.045	0.055	1.14	1.39
T	0.230	0.270	5.85	6.85

TO-220AC



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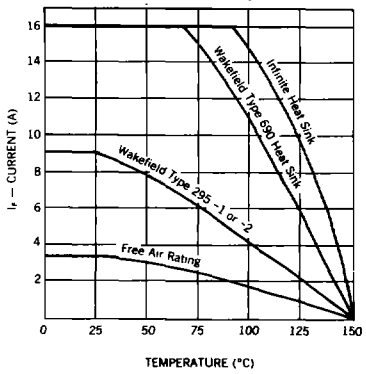
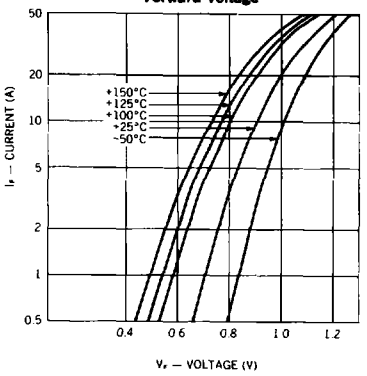
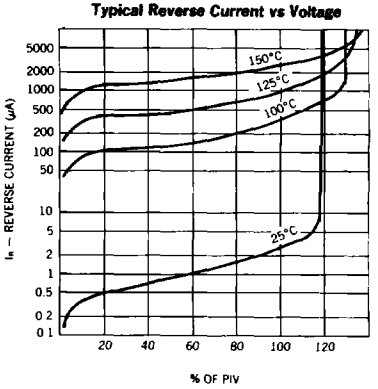
Output Current vs Temperature



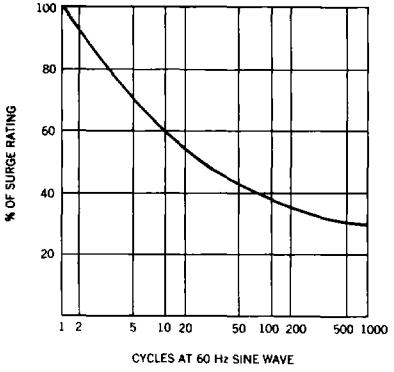
Typical Forward Current vs Forward Voltage



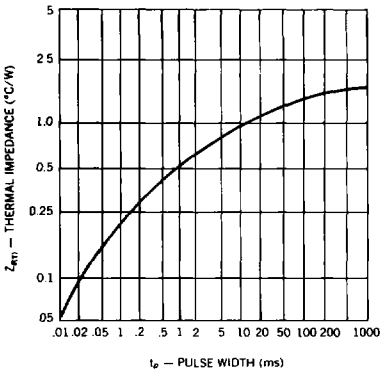
Typical Reverse Current vs Voltage



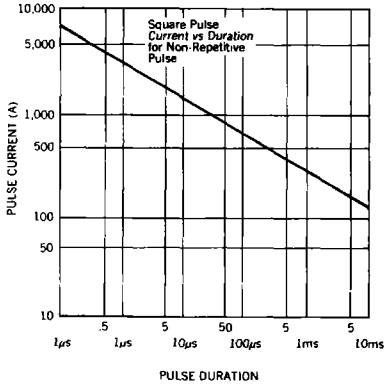
Multiple Surge Current vs Duration



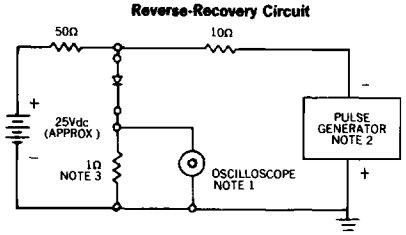
Thermal Impedance vs Pulse Width



Forward Pulse Current vs Duration



Reverse-Recovery Circuit



NOTES:
1. Oscilloscope: Rise time ≤ 3ns, input impedance = 50Ω
2. Pulse Generator: Rise time ≤ 8ns, source impedance 10Ω
3. Current viewing resistor, non-inductive, coaxial recommended.

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