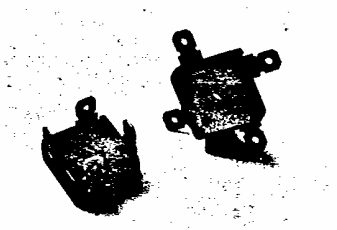
30 Amp Epoxy Bridge Rectifiers VK Series

January 1984

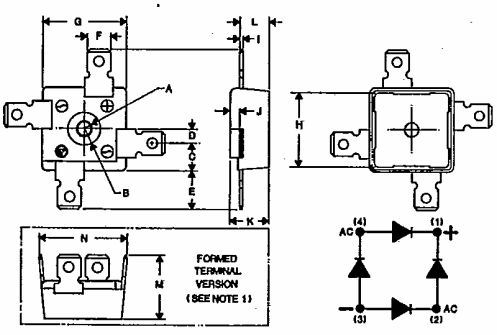
- 30 Amps DC Forward Current at T_C = 80° C
- 300 Amps Peak One Half Cycle Surge Current
- Externally Exposed Copper Mounting Pad For Low Thermal Resistance
- 2200 Volts Minimum Circuit-to-Case Insulation



MAXIMUM RATINGS (At T_A = 25°C unless otherwise noted)	SYMBOL	CONTROLLED AVALANCHE			NON-CONTROLLED AVALANCHE							UNITS
Series Number		VK247	VK447	VK647	VK048	VK148	VK248	VK448	VK648	VK848	VK1048	
DC Blocking Voltage, Working Peak Reverse Voltage, Peak Repetitive Reverse Voltage	V_R V_{RWM} V_{RRM}	200	400	600	50	100	200	400	600	800	1000	Volts
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	35	70	140	280	420	560	700	Volts
Power Dissipation In $V_{(BR)}$ Region for 100 μ sec Square Wave	P_{RM}	1500			NA							Watts
Continuous Power Dissipation In $V_{(BR)}$ Region at T_C = 40°C	P_R	4			NA							Watts
Peak Surge Current, ½ Cycle at 60 Hz, (Non-Rep) and T_C = 80°C (Fig. 2)	I_{FSM}	300										Amps
Peak Surge Current, 1 sec at 60 Hz and T_C = 80°C (Fig. 2)	I_{FRM}	75										Amps
Avg. Forward Current at T_C = 80°C (Fig. 1)	I_O	30										Amps
Avg. Forward Current at T_A = 40°C (No Heat Sink)	I_O	5										Amps
Junction Operating and Storage Temperature Range	T_J, T_{STG}	−50 to +150										°C
Fusing Data	I^2t	375										Amp^2 -Sec

ELECTRICAL CHARACTERISTICS (At T_A = 25°C unless otherwise noted)	SYMBOL	CONTROLLED AVALANCHE			NON-CONTROLLED AVALANCHE							UNITS
Series Number		VK247	VK447	VK647	VK048	VK148	VK248	VK448	VK648	VK848	VK1048	
Minimum Avalanche Voltage,	$V_{(BR)}$	250	450	650	NA							Volts
Maximum Avalanche Voltage	$V_{(BR)}$	700	900	1100	NA							Volts
Maximum Instantaneous Forward Voltage Drop (per diode) at 30 Amps (Fig. 3)	V_{FM}	1.4										Volts/ Leg
Maximum Reverse Current at Rated V_{RM} at T_J = 40°C, (Fig. 4)	I_{RM}	10										μ A
Maximum Reverse Current at Rated V_{RM} at T_J = 175°C, (Fig. 4)	I_{RM}	1.0										mA
Insulation Strength From Circuit to Case (min.)		2200										Volts DC
Maximum Thermal Resistance, Junction to Case	$R_{\theta J\text{-}C}$	1.0										°C/W

Recognized Under Components Program of Underwriters Laboratories, Inc.



LTR	INCHES	MILLIMETERS
A	.162-.168 Dia.	4,11-4,27 Dia.
B	.345-.355 Dia.	8,76-9,02 Dia.
C	.23-.27 Typ.	5,84-6,86 Typ.
D	.138-.158 Typ.	3,51-4,01 Typ.
E	.38-.42 Typ.	9,65-10,67 Typ.
F	.245-.255 Typ.	6,22-6,48 Typ.
G	.85-.89 Sq.	21,59-22,61 Sq.
H	.76-.78 Sq.	19,30-19,81 Sq.
I	.030-.034 Typ.	,76-,86 Typ.
J	.09-.11	2,29-2,79 Typ.
K	.38-.42	9,65-10,67
L	.29-.30	7,37-7,62
M	.75 Max.	19,05 Max.
N	.69-1.04 Typ.	22,61-26,42 Typ.

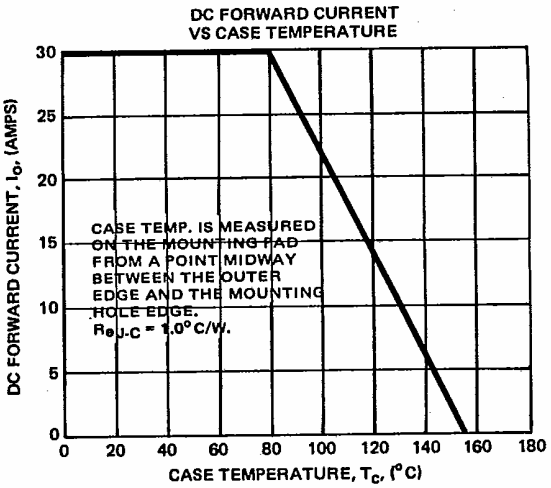


FIGURE 1

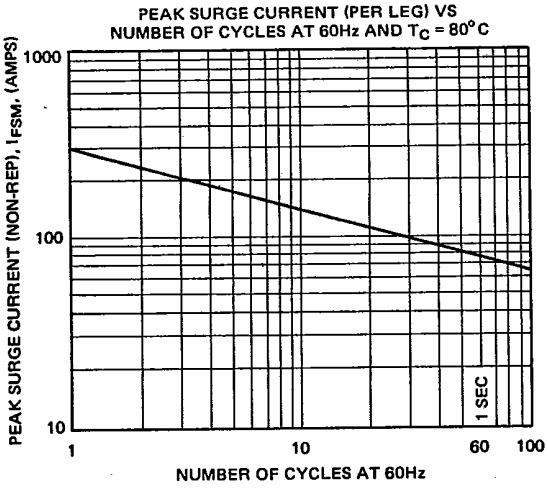


FIGURE 2

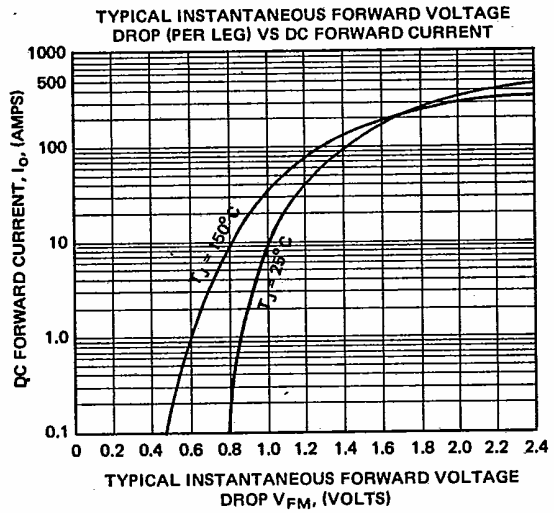


FIGURE 3

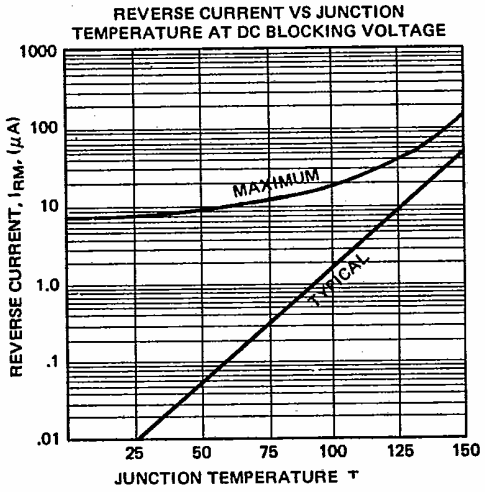


FIGURE 4

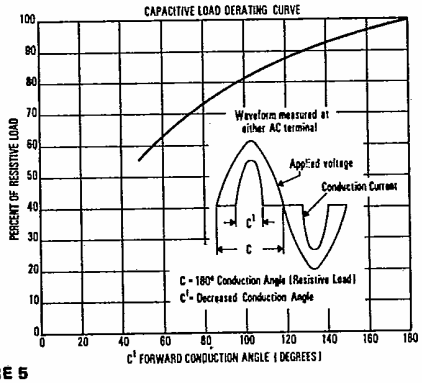


FIGURE 5

NOTES:

1. Standard parts have terminals bent up at approximately 90° angle from mounting plane. To order terminals parallel to mounting plane (see front page photo), change the second digit of the part number from "4" to "3" Example: Change VK247 to VK237.

FOR TYPICAL MOUNTING DETAIL, see page 32

