

Transient Voltage Suppressor

Breakdown Voltage 33 to 400 V
Peak Pulse Power 30KW

Features

- Breakdown Voltages (V_{BR}) from 33 to 400V
- 30KW peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle):0.05%
- Fast Response Time
- Low incremental surge resistance
- Excellent clamping capability
- Available in uni-directional and bi-directional
- High temperature soldering guaranteed: 265 $^{\circ}$ C /10 seconds, 0.375" (9.5mm) lead length, 5lbs. (2.3kg) tension

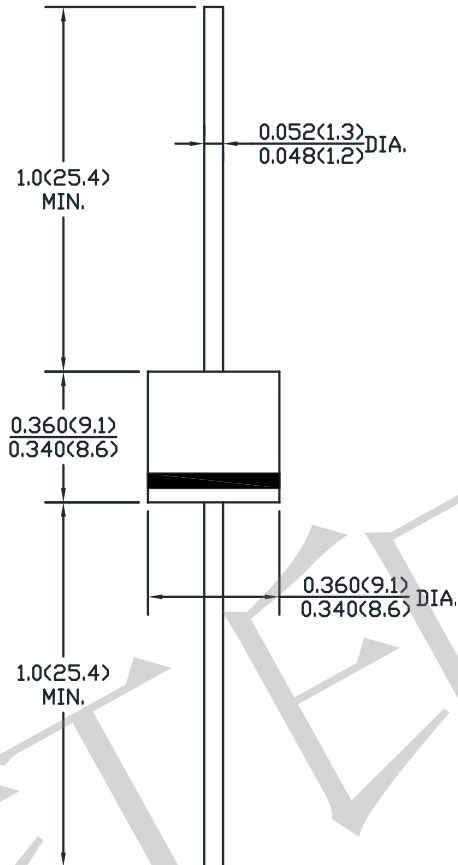
Application

- Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFE, signal lines of sensor units for consumer, computer, industrial, automotive and telecommunication

Mechanical Data

- **Case:** Void-free transfer molded thermosetting epoxy body meeting UL94V-O
- **Terminals:** Tin-Lead or ROHS Compliant annealed matte-Tin plating readily solderable per MIL-STD-750, Method 2026
- **Marking:** Body marked with part number
- **Polarity:** Band denotes cathode. Bidirectional not marked.
- **Weight:** 2.1g (Approximately)

CASE: R-6



Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics @ 25 $^{\circ}$ C unless otherwise specified

Symbol	Conditions	Value	Unit
P_{PPM}	Peak pulse power capability with a 10/1000 μ s	30	KW
I_{PPM}	Peak pulse current with a 10/1000 μ s	SEE TABLE 1	A
$P_{M(AV)}$	Steady state power dissipation at $T_L=27.5^{\circ}$ C, Lead lengths 0.375"(10mm)	7	W
	Steady state power dissipation at $T_A=25^{\circ}$ C when mounted on FR4 PC described for thermal resistance	1.61	W
$R_{\theta JL}$	Thermal resistance junction to lead	17.5	$^{\circ}$ C/W
$R_{\theta JA}$	Thermal resistance junction to ambient	77.5	$^{\circ}$ C/W
T_J, T_{STG}	Operating and Storage Temperature	-65 to +150	$^{\circ}$ C

Electrical Characteristics @ 25°C (Unless Otherwise Noted) TABLE1

Microsemi Part Number	Breakdown Voltage V_{BR} @ I_{BR}			Rated Stand Off Voltage	Maximum Reverse current I_D @ V_{WM}	Maximum Peak Pulse Current	Maximum Clamping Voltage V_C @ I_{PP} 10/1000 μ s	Maximum Temperature Coefficient of $V_{(BR)}$
	MIN	MAX						
	$V_{BR}(V)$		$I_{BR}(mA)$					
30KP33	36.7	44.9	50	33	5000	496	64.6	42
30KP33A	36.7	40.6	50	33	5000	548	58.6	38
30KP36	40.0	48.9	50	36	5000	454	68.2	46
30KP36A	40.0	44.2	50	36	5000	502	61.8	41
30KP40	44.4	54.3	20	40	1500	412	75.8	51
30KP40A	44.4	49.1	20	40	1500	456	68.6	46
30KP43	47.8	58.4	10	43	500	380	79.0	55
30KP43A	47.8	52.8	10	43	500	430	71.0	50
30KP45	50.0	61.1	5	45	150	372	80.7	57
30KP45A	50.0	55.3	5	45	150	410	73.0	52
30KP48	53.3	65.1	5	48	150	350	85.9	62
30KP48A	53.3	58.9	5	48	150	386	77.7	56
30KP51	56.7	69.3	5	51	50	328	91.5	66
30KP51A	56.7	62.7	5	51	50	362	82.8	60
30KP54	60.0	73.6	5	54	25	310	96.8	70
30KP54A	60.0	66.3	5	54	25	342	87.5	63
30KP58	64.4	78.7	5	58	15	288	104.0	76
30KP58A	64.4	71.2	5	58	15	320	94.0	68
30KP60	66.7	81.5	5	60	15	280	107.0	78
30KP60A	66.7	73.7	5	60	15	304	97.3	71
30KP64	71.1	86.9	5	64	10	260	115.0	84
30KP64A	71.1	78.6	5	64	10	288	104.0	76
30KP70	77.8	95.1	5	70	10	238	126.0	92
30KP70A	77.8	86.0	5	70	10	264	114.0	83
30KP75	83.3	102.0	5	75	10	222	135.0	100
30KP75A	83.3	92.1	5	75	10	246	122.0	89
30KP78	86.7	106.0	5	78	10	214	140.0	104
30KP78A	86.7	95.8	5	78	10	238	126.0	93
30KP85	94.4	115.0	5	85	10	198	152.0	113
30KP85A	94.4	104.0	5	85	10	218	137.0	102
30KP90	100.0	122.0	5	90	10	188	160.0	120
30KP90A	100.0	111.0	5	90	10	206	146.0	109
30KP100	111.0	136.0	5	100	10	168	179.0	134
30KP100A	111.0	123.0	5	100	10	186	162.0	121
30KP110	122.0	149.0	5	110	10	154	196.0	147
30KP110A	122.0	135.0	5	110	10	168	178.0	133
30KP120	133.0	163.0	5	120	10	140	214.0	161
30KP120A	133.0	147.0	5	120	10	156	193.0	145
30KP130	144.0	176.0	5	130	10	130	231.0	174
30KP130A	144.0	159.0	5	130	10	142	209.0	157
30KP150	167.0	204.0	5	150	10	112	268.0	202
30KP150A	167.0	185.0	5	150	10	124	243.0	183
30KP160	178.0	218.0	5	160	10	104	287.0	216
30KP160A	178.0	197.0	5	160	10	116	259.0	195
30KP170	189.0	231.0	5	170	10	98	304.0	229
30KP170A	189.0	209.0	5	170	10	110	275.0	207
30KP180	200.0	244.0	5	180	10	94	321.0	242
30KP180A	200.0	221.0	5	180	10	104	291.0	219
30KP200	222.0	271.0	5	200	10	84	356.0	269
30KP200A	222.0	245.0	5	200	10	94	322.0	243
30KP220	245.0	299.0	5	220	10	76	393.0	297
30KP220A	245.0	271.0	5	220	10	84	356.0	269

Electrical Characteristics @ 25°C (Unless Otherwise Noted) TABLE1

Microsemi Part Number	Breakdown Voltage $V_{BR} @ I_{BR}$		Rated Stand Off Voltage	Maximum Reverse current $I_D @ V_{WM}$	Maximum Peak Pulse Current	Maximum Clamping Voltage $V_C @ I_{PP} 10/1000\mu s$	Maximum Temperature Coefficient of $V_{(BR)}$	
	MIN	MAX						
	$V_{BR}(V)$		$I_{BR}(mA)$	$V_{WM}(V)$	$I_D(\mu A)$	$I_{PP}(A)$	$V_C(V)$	$\alpha_{V(BR)}(mV/^\circ C)$
30KP250	278.0	308.0	5	250	10	74	403.0	306
30KP260A	289.0	320.0	5	260	10	71	419.0	318
30KP280	311.0	345.0	5	280	10	66	451.0	344
30KP300A	333.0	369.0	5	300	10	62	483.0	368
30KP350A	389.0	431.0	5	350	10	53	564.0	430
30KP400A	444.0	492.0	5	400	10	46	644.0	490

Note1. For bidirectional construction, indicate a C or CA suffix after the part number, i.e. 30KP400C or 30KP400CA.

Characteristic Curve

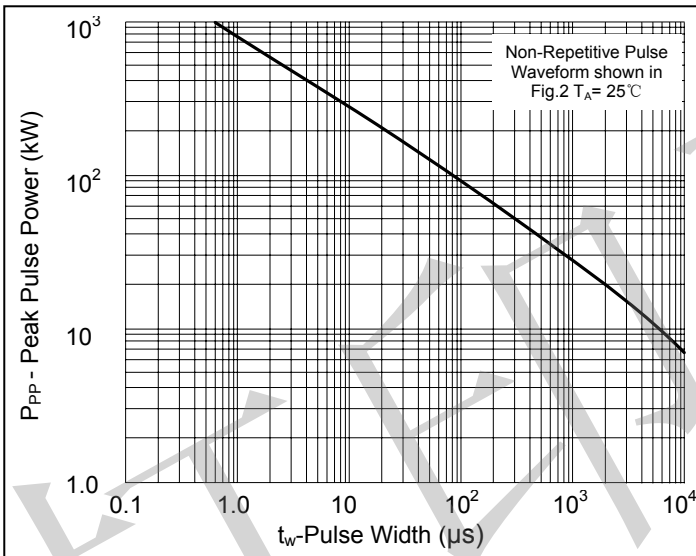


Fig. 1 Peak Pulse Power vs. Pulse Time

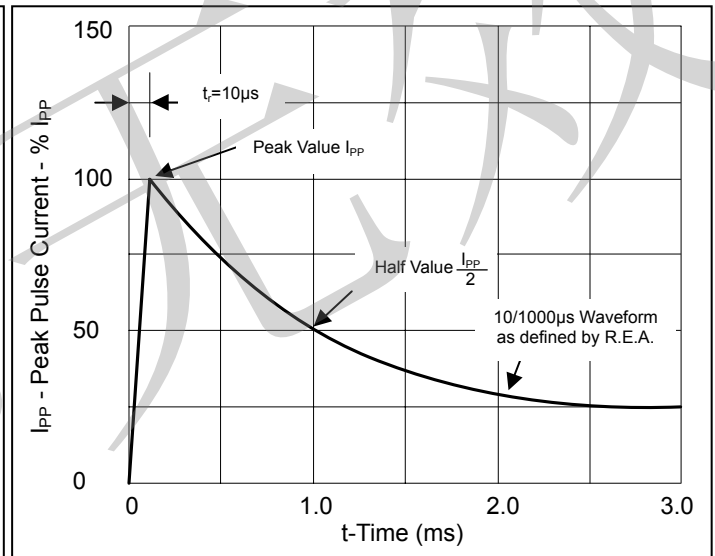


Fig.2 Pulse Waveform for Exponential Surge

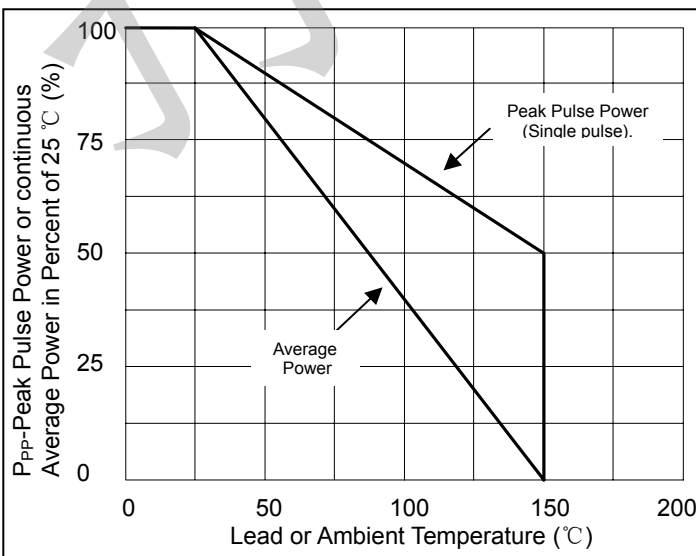


Fig.3 Derating Curve

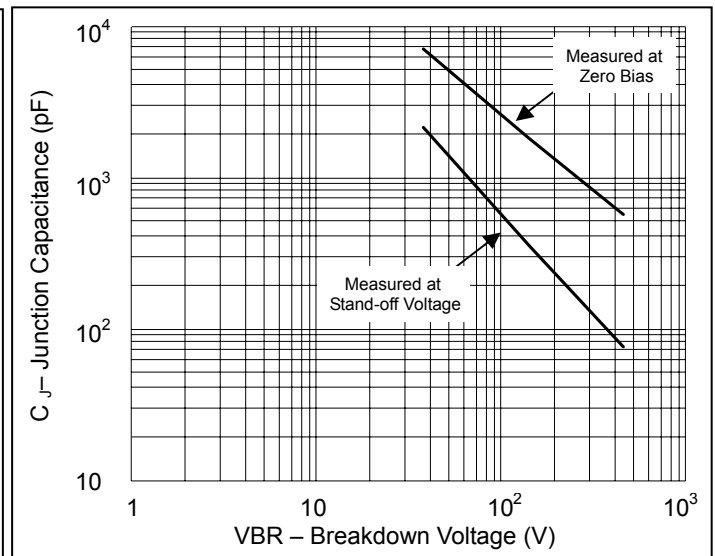


Fig.4 Typical Capacitance vs. Breakdown Voltage (Unipolar)