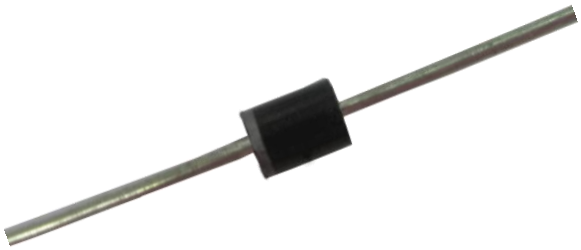
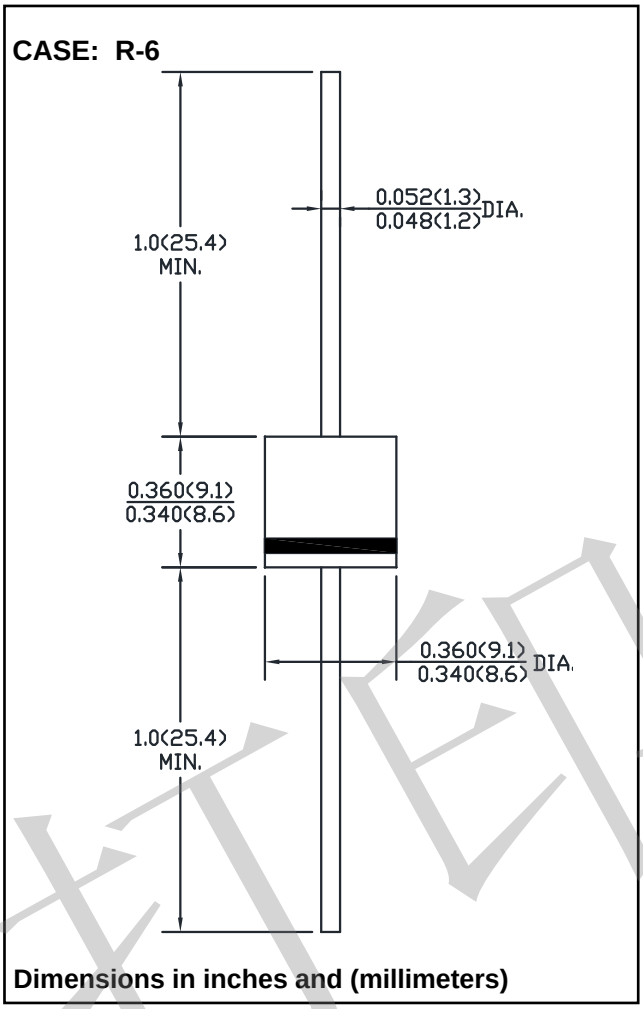
15KP17 thru 15KP280CA



Transient Voltage Suppressor

Breakdown Voltage 17 to 280 Volts
Peak Pulse Power 15,000 Watts



Features

- Breakdown Voltages (V_{BR}) from 17 to 280V
- 15000W peak pulse power capability with a 10/1000μs 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℃ /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 IC_S, 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）

Maximum Ratings and Electrical Characteristics @ 25°C unless otherwise specified

Symbol	Conditions	Value	Unit
P_{PPM}	Peak pulse power capability with a 10/1000μs	15000	W
I_{PPM}	Peak pulse current with a 10/1000μs	SEE TABLE1	A
$P_{M(AV)}$	Steady state power dissipation at T_L=30℃ ,Lead lengths 0.375"(10mm)	6	W
	Steady state power dissipation at T_A=25℃ when mounted on FR4 PC described for thermal resistance	1.56	W
$R_{\theta JL}$	Thermal resistance junction to lead	20	℃/W
$R_{\theta JA}$	Thermal resistance junction to ambient	80	℃/W
T_J, T_{STG}	Operating and Storage Temperature	-65 to +150	℃

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

Microsemi Part Number (Note 2)	Breakdown Voltage V_{BR} @ I_{BR}			Reverse Stand Off Voltage (Note 1)	Maximum Standby current I_D @ V_{WM}	Maximum Peak Pulse Current	Maximum Clamping Voltage V_C @ I_{PP}	Maximum Temperature Coefficient of $V_{(BR)}$
	MIN	MAX						
	V_{BR}(V)		I_{BR}(mA)	V_{WM}(V)	I_D(μA)	I_{PP} (A)	V_C(V)	$\alpha_{V(BR)}$(mV/℃)
15KP17	18.9	23.1	50	17.0	5000	464	32.3	19
15KP17A	18.9	20.9	50	17.0	5000	512	29.3	17
15KP18	20.0	24.4	50	18.0	5000	439	34.2	20
15KP18A	20.0	22.1	50	18.0	5000	485	30.9	18
15KP20	22.2	27.1	20	20.0	1500	396	37.9	24
15KP20A	22.2	24.5	20	20.0	1500	437	34.3	21
15KP22	24.4	29.8	10	22.0	500	365	41.1	27
15KP22A	24.4	26.9	10	22.0	500	404	37.1	24
15KP24	26.7	32.6	5	24.0	150	333	45.0	30
15KP24A	26.7	29.5	5	24.0	150	369	40.7	27
15KP26	28.9	35.3	5	26.0	50	308	48.7	32
15KP26A	28.9	31.9	5	26.0	50	341	44.0	29
15KP28	31.1	38.0	5	28.0	25	286	52.4	35
15KP28A	31.1	34.4	5	28.0	25	316	47.5	31
15KP30	33.3	40.7	5	30.0	15	267	56.2	27
15KP30A	33.3	36.8	5	30.0	15	296	50.7	34
15KP33	36.7	44.9	5	33.0	10	248	60.6	42
15KP33A	36.7	40.6	5	33.0	10	274	54.8	38
15KP36	40.0	48.9	5	36.0	10	227	66.0	46
15KP36A	40.0	44.2	5	36.0	10	251	59.7	41
15KP40	44.4	54.3	5	40.0	10	206	72.8	51
15KP40A	44.4	49.1	5	40.0	10	228	65.8	46
15KP43	47.8	58.4	5	43.0	10	195	77.1	55
15KP43A	47.8	52.8	5	43.0	10	215	69.7	50
15KP45	50.0	61.1	5	45.0	10	186	80.7	57
15KP45A	50.0	55.3	5	45.0	10	205	73.0	52
15KP48	53.3	65.1	5	48.0	10	175	85.9	62
15KP48A	53.3	58.9	5	48.0	10	193	77.7	56
15KP51	56.7	69.3	5	51.0	10	164	91.5	66
15KP51A	56.7	62.7	5	51.0	10	181	82.8	60
15KP54	60.0	73.6	5	54.0	10	155	96.8	70
15KP54A	60.0	66.3	5	54.0	10	171	87.5	63
15KP58	64.4	78.7	5	58.0	10	144	104.0	76
15KP58A	64.4	71.2	5	58.0	10	160	94.0	68
15KP60	66.7	81.5	5	60.0	10	140	107.0	78
15KP60A	66.7	73.7	5	60.0	10	154	97.3	71
15KP64	71.1	86.9	5	64.0	10	130	115.0	84
15KP64A	71.1	78.6	5	64.0	10	144	104.0	76
15KP70	77.8	95.1	5	70.0	10	119	126.0	92
15KP70A	77.8	86.0	5	70.0	10	132	114.0	83
15KP75	83.3	102.0	5	75.0	10	111	135.0	100
15KP75A	83.3	92.1	5	75.0	10	123	122.0	89
15KP78	86.7	106.0	5	78.0	10	107	140.0	104
15KP78A	86.7	95.8	5	78.0	10	119	126.0	93
15KP85	94.4	115.0	5	85.0	10	99	152.0	113
15KP85A	94.4	104.0	5	85.0	10	109	137.0	102
15KP90	100.0	122.0	5	90.0	10	94	160.0	120
15KP90A	100.0	111.0	5	90.0	10	103	146.0	109
15KP100	111.0	136.0	5	100.0	10	84	179.0	134
15KP100A	111.0	123.0	5	100.0	10	93	162.0	121
15KP110	122.0	149.0	5	110.0	10	77	196.0	147
15KP110A	122.0	135.0	5	110.0	10	84	178.0	133

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

Microsemi Part Number (Note 2)	Breakdown Voltage V_{BR} @ I_{BR}			Reverse Stand Off Voltage (Note 1)	Maximum Standby current I_D @ V_{WM}	Maximum Peak Pulse Current	Maximum Clamping Voltage V_C @ I_{PP}	Maximum Temperature Coefficient of $V_{(BR)}$
	MIN	MAX						
	V_{BR}(V)		I_{BR}(mA)	V_{WM}(V)	I_D(μA)	I_{PP} (A)	V_C(V)	$\alpha_{V(BR)}$(mV/℃)
15KP120	133.0	163.0	5	120.0	10	70	214.0	161
15KP120A	133.0	147.0	5	120.0	10	78	193.0	145
15KP130	144.0	176.0	5	130.0	10	65	231.0	174
15KP130A	144.0	159.0	5	130.0	10	72	209.0	157
15KP150	167.0	204.0	5	150.0	10	56	268.0	202
15KP150A	167.0	185.0	5	150.0	10	62	243.0	183
15KP160	178.0	218.0	5	160.0	10	52	287.0	216
15KP160A	178.0	197.0	5	160.0	10	58	259.0	195
15KP170	189.0	231.0	5	170.0	10	49	304.0	229
15KP170A	189.0	209.0	5	170.0	10	55	275.0	207
15KP180	200.0	244.0	5	180.0	10	47	321.0	242
15KP180A	200.0	221.0	5	180.0	10	52	291.0	219
15KP200	222.0	271.0	5	200.0	10	42	356.0	269
15KP200A	222.0	245.0	5	200.0	10	47	322.0	243
15KP220	245.0	299.0	5	220.0	10	38	393.0	297
15KP220A	245.0	271.0	5	220.0	10	42	356.0	269
15KP240	267.0	326.0	5	240.0	10	35	428.0	324
15KP240A	267.0	295.0	5	240.0	10	39	388.0	293
15KP260	289.0	353.0	5	260.0	10	32	464.0	352
15KP260A	289.0	319.0	5	260.0	10	36	419.0	317
15KP280	311.0	380.0	5	280.0	10	30	500.0	378
15KP280A	311.0	344.0	5	280.0	10	33	452.0	342

Note1. TVS are normally selected with reverse “Stand Off Voltage” (V_{WM}) which should be equal to or greater than the dc or continuous peak operating voltage level.

Note2. For bidirectional construction, indicate a C or CA suffix after the part number, i.e. 15KP280C or 15KP280CA.

Characteristic Curve

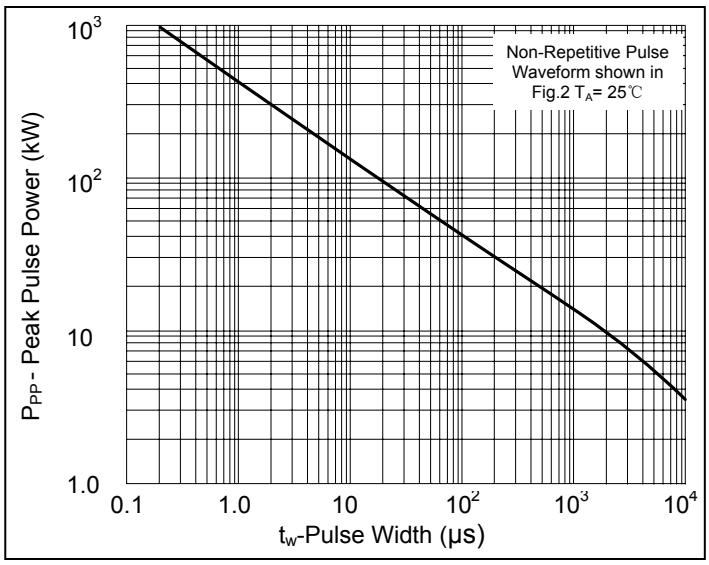


Fig. 1 Peak Pulse Power vs. Pulse Time

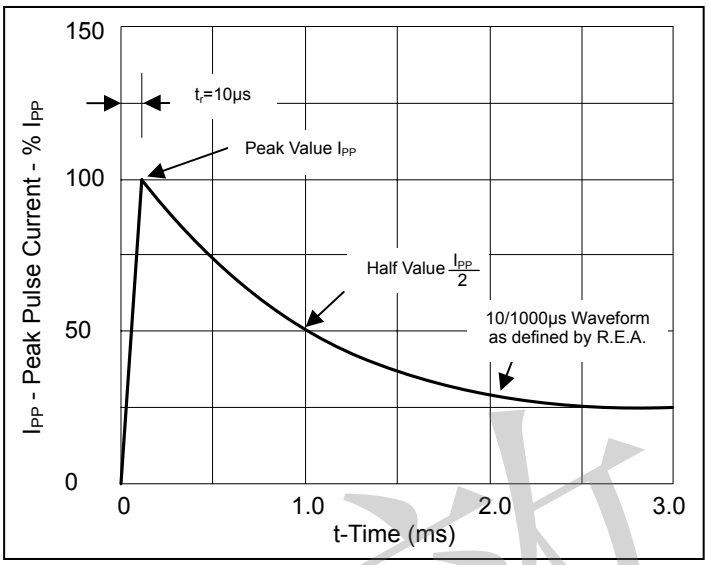


Fig.2 Pulse Waveform for Exponential Surge

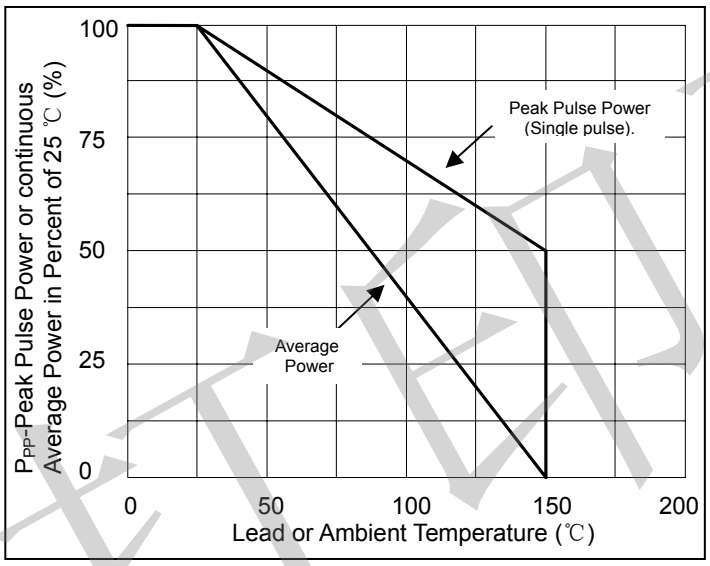


Fig.3 Derating Curve

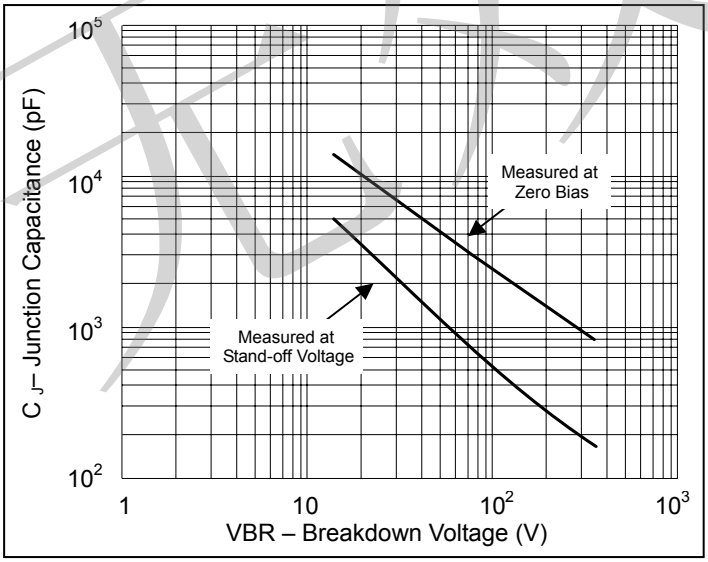


Fig.4 Typical Capacitance vs. Breakdown Voltage (Unipolar)