



New Product

5KA10 thru 5KA36A

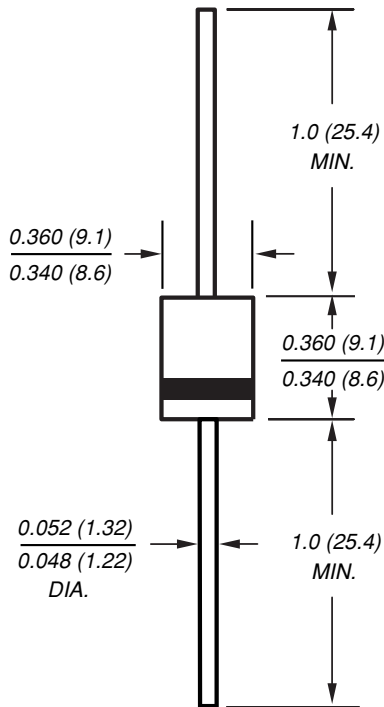
Vishay Semiconductors
formerly General Semiconductor

Automotive Transient Voltage Suppressors

Stand-off Voltage 10 to 36V
Peak Pulse Power 5000W (10/1000μs)



Case Style P600



Dimensions in inches and (millimeters)

Features

- Designed for under the hood applications
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exclusive patented PAR[®] oxide passivated chip construction
- Low incremental surge resistance
- Ideally suited for automotive “load dump” applications
- High temp. soldering guaranteed: 300°C/10 seconds, 0.375” (9.5mm) lead length, 5lbs. (2.3kg) tension
- Available in uni-directional only

Mechanical Data

Case: Molded plastic body over nitride passivated die

Terminals: Axial leads, solderable per MIL-STD-750, Method 2026

Polarity: The color band denotes the positive end (cathode)

Weight: 0.07 oz., 2.1 g

Mounting position: Any

Packaging codes/options:

1/750 ea. per Bulk Box, 7.5K/box

4/800 ea. per 13" Reel (52mm Tape), 3.2K/box

23/300 ea. per Ammo Box (52mm Tape), 2.7K/box

Maximum Ratings and Characteristics Ratings at 25°C unless otherwise noted.

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000μs waveform ⁽¹⁾	PPPM	Minimum 5000	W
Peak pulse current with a 10/1000μs waveform ⁽¹⁾	IPPM	See next table	A
Steady state power dissipation at T _L = 75°C lead lengths 0.375” (9.5mm) ⁽²⁾	P _{M(AV)}	5.5	W
Peak forward surge current, 8.3ms single half sine-wave ⁽³⁾	I _{FSM}	400	A
Typical thermal resistance, junction to ambient ⁽²⁾	R _{θJA}	30	°C/W
Typical thermal resistance, junction to lead ⁽²⁾	R _{θJL}	10	°C/W
Instantaneous forward voltage at 80A ⁽³⁾	V _F	1.8	V
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +185	°C

Notes:

(1) Non-repetitive current pulse, per Fig. 3 and derated above T_A = 25°C per Fig. 2.

(2) Mounted on copper pad area of 1.6 x 1.6” (40 x 40mm) per Fig. 5.

(3) Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

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Electrical Characteristics T_A = 25°C unless otherwise noted

Device Type	Breakdown Voltage V _(BR) (V) ⁽¹⁾		Test Current at I _T (mA)	Stand-off Voltage V _{WM} (V)	Maximum Reverse Leakage at V _{WM} I _D (μA)	Maximum Peak Pulse Current I _{PPM} ⁽²⁾ (A)	Maximum Clamping Voltage at I _{PPM} V _C (V)	Maximum Temperature Coefficient of V _(BR) (% / °C)
	MIN	MAX						
5KA10	11.1	13.6	5.0	10.0	15	266	18.8	0.084
5KA10A	11.1	12.3	5.0	10.0	15	294	17.0	0.084
5KA11	12.2	14.9	5.0	11.0	10	249	20.1	0.086
5KA11A	12.2	13.5	5.0	11.0	10	275	18.2	0.086
5KA12	13.3	16.3	5.0	12.0	5.0	227	22.0	0.088
5KA12A	13.3	14.7	5.0	12.0	5.0	251	19.9	0.088
5KA13	14.4	17.6	5.0	13.0	2.0	210	23.8	0.090
5KA13A	14.4	15.9	5.0	13.0	2.0	233	21.5	0.090
5KA14	15.6	19.1	5.0	14.0	1.0	194	25.8	0.092
5KA14A	15.6	17.2	5.0	14.0	1.0	216	23.2	0.092
5KA15	16.7	20.4	5.0	15.0	1.0	186	26.9	0.094
5KA15A	16.7	18.5	5.0	15.0	1.0	205	24.4	0.094
5KA16	17.8	21.8	5.0	16.0	1.0	174	28.8	0.096
5KA16A	17.8	19.7	5.0	16.0	1.0	192	26.0	0.096
5KA17	18.9	23.1	5.0	17.0	1.0	164	30.5	0.097
5KA17A	18.9	20.9	5.0	17.0	1.0	181	27.6	0.097
5KA18	20.0	24.4	5.0	18.0	1.0	155	32.2	0.098
5KA18A	20.0	22.1	5.0	18.0	1.0	171	29.2	0.098
5KA20	22.2	27.1	5.0	20.0	1.0	140	35.8	0.099
5KA20A	22.2	24.5	5.0	20.0	1.0	154	32.4	0.099
5KA22	24.4	29.8	5.0	22.0	1.0	127	39.4	0.100
5KA22A	24.4	26.9	5.0	22.0	1.0	141	35.5	0.100
5KA24	26.7	32.6	5.0	24.0	1.0	116	43.0	0.101
5KA24A	26.7	29.5	5.0	24.0	1.0	129	38.9	0.101
5KA26	28.9	35.3	5.0	26.0	1.0	107	46.6	0.101
5KA26A	28.9	31.9	5.0	26.0	1.0	119	42.1	0.101
5KA28	31.1	38.0	5.0	28.0	1.0	100	50.1	0.102
5KA28A	31.1	34.4	5.0	28.0	1.0	110	45.4	0.102
5KA30	33.3	40.7	5.0	30.0	1.0	93.5	53.5	0.103
5KA30A	33.3	36.8	5.0	30.0	1.0	103	48.4	0.103
5KA33	36.7	44.9	5.0	33.0	1.0	84.7	59.0	0.104
5KA33A	36.7	40.6	5.0	33.0	1.0	93.8	53.3	0.104
5KA36	40.0	48.9	5.0	36.0	1.0	77.8	64.3	0.104
5KA36A	40.0	44.2	5.0	36.0	1.0	86.1	58.1	0.104



Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 – Peak Pulse Power Rating Curve

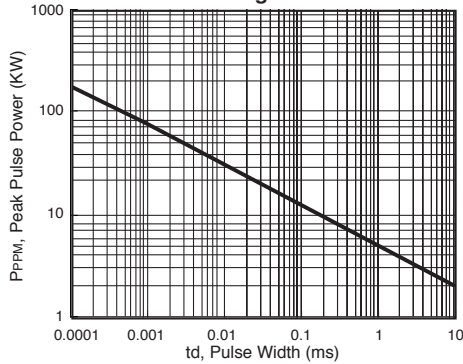


Fig. 2 – Pulse Derating Curve

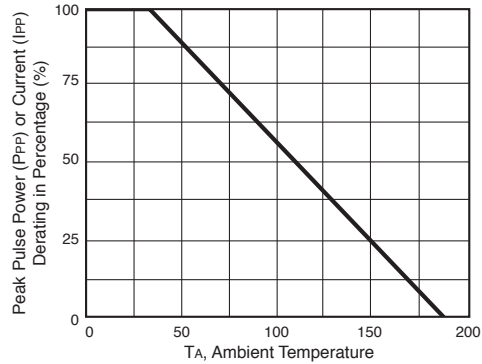


Fig. 3 – Pulse Waveform

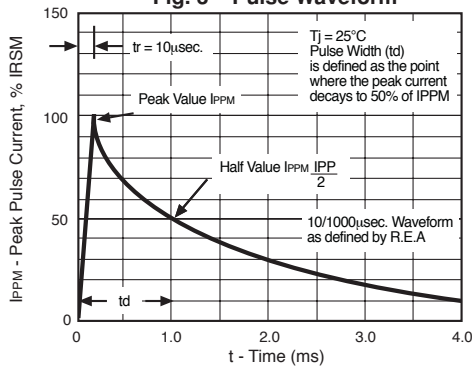


Fig. 4 – Typical Junction Capacitance

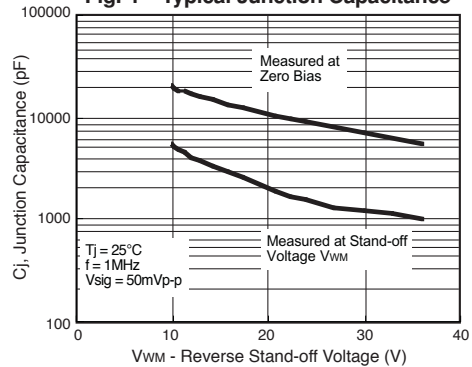


Fig. 5 – Steady State Power Derating Curve

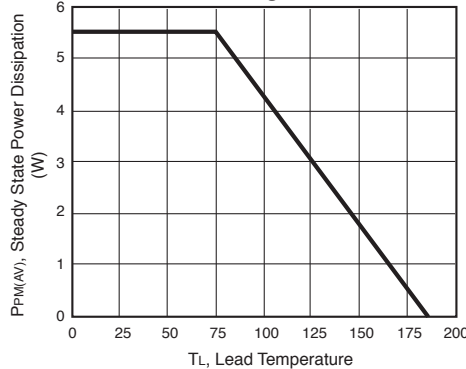


Fig. 6 – Maximum Non-repetitive Forward Surge Current

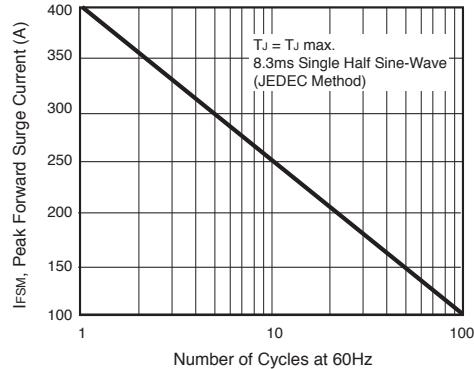
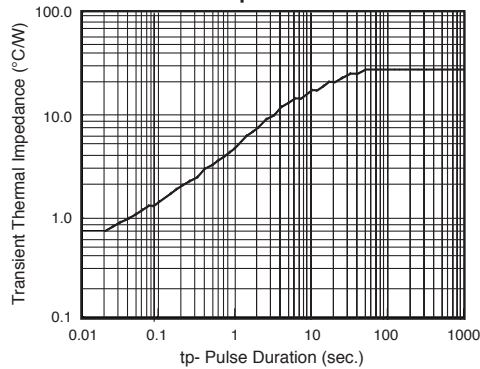


Fig. 7 – Typical Transient Thermal Impedance





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