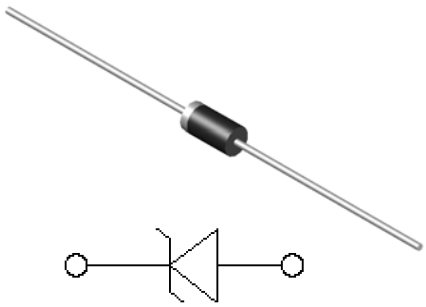
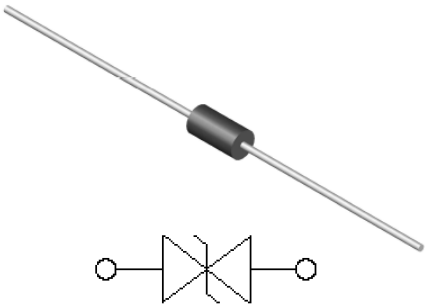
Transient Voltage Suppressor Diodes

Uni-directional



Bi-directional



Features

- Excellent clamping capability
- Low dynamic impedance
- Solder dip 275 °C max. 7 s, per JESD 22-B106

Mechanical Data

- **Package**: DO-204AC(DO-15)
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:**Color band denotes cathode end

■Maximum Ratings (Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform (1)	P_{PPM}	W	600
Peak pulse current, with a 10/1000us waveform (1)	I_{PPM}	A	See Next Table
Power dissipation, on infinite heat sink at TL=75℃	P_D	W	5
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only (2)	I_{FSM}	A	100
Operating junction and storage temperature range	T_J,T_{STG}	℃	-55 to +150
ESD according to IEC61000-4-2 air discharge	V_{ESD}	KV	±30KV
ESD according to IEC61000-4-2 contact discharge			±30KV

■Electrical Characteristics（Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage at 25A for unidirectional only (3)	V_{FM}	V	3.5/5.0

■Thermal Characteristics （Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal Resistance(Typical)	$R_{\theta J-A}$	℃/W	Junction to ambient	75
	$R_{\theta J-L}$	℃/W	Junction to lead	20

Notes:

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

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

(3) V_F=3.5V Max for devices of V_{BR}≤220V，and V_F=5.0V Max for devices of V_{BR}＞220V.

■Ordering Information (Example)

PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
P6KE SERIES	D1	Approximate 0.38	3000	3000	30000	Tape
P6KE SERIES	C1	Approximate 0.38	500	500	25000	Bulk

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R@ V_{WM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
		Min (V)	Max (V)	I_T (mA)				
P6KE6.8A	P6KE6.8CA	6.45	7.14	10	1000	5.8	57.1	10.5
P6KE7.5A	P6KE7.5CA	7.13	7.88	10	500	6.4	53.1	11.3
P6KE8.2A	P6KE8.2CA	7.79	8.61	10	200	7.02	49.6	12.1
P6KE9.1A	P6KE9.1CA	8.65	9.55	1	50	7.78	44.8	13.4
P6KE10A	P6KE10CA	9.5	10.5	1	10	8.55	41.4	14.5
P6KE11A	P6KE11CA	10.5	11.6	1	5	9.4	38.5	15.6
P6KE12A	P6KE12CA	11.4	12.6	1	5	10.2	35.9	16.7
P6KE13A	P6KE13CA	12.4	13.7	1	5	11.1	33	18.2
P6KE15A	P6KE15CA	14.3	15.8	1	1	12.8	28.3	21.2
P6KE16A	P6KE16CA	15.2	16.8	1	1	13.6	26.7	22.5
P6KE18A	P6KE18CA	17.1	18.9	1	1	15.3	23.8	25.2
P6KE20A	P6KE20CA	19	21	1	1	17.1	21.7	27.7
P6KE22A	P6KE22CA	20.9	23.1	1	1	18.8	19.6	30.6
P6KE24A	P6KE24CA	22.8	25.2	1	1	20.5	18.1	33.2
P6KE27A	P6KE27CA	25.7	28.4	1	1	23.1	16	37.5
P6KE30A	P6KE30CA	28.5	31.5	1	1	25.6	14.5	41.4
P6KE33A	P6KE33CA	31.4	34.7	1	1	28.2	13.1	45.7
P6KE36A	P6KE36CA	34.2	37.8	1	1	30.8	12	49.9
P6KE39A	P6KE39CA	37.1	41	1	1	33.3	11.1	53.9
P6KE43A	P6KE43CA	40.9	45.2	1	1	36.8	10.1	59.3
P6KE47A	P6KE47CA	44.7	49.4	1	1	40.2	9.3	64.8
P6KE51A	P6KE51CA	48.5	53.6	1	1	43.6	8.6	70.1
P6KE56A	P6KE56CA	53.2	58.8	1	1	47.8	7.8	77
P6KE62A	P6KE62CA	58.9	65.1	1	1	53	7.1	85
P6KE68A	P6KE68CA	64.6	71.4	1	1	58.1	6.5	92
P6KE75A	P6KE75CA	71.3	78.8	1	1	64.1	5.8	103
P6KE82A	P6KE82CA	77.9	86.1	1	1	70.1	5.3	113
P6KE91A	P6KE91CA	86.5	95.5	1	1	77.8	4.8	125
P6KE100A	P6KE100CA	95	105	1	1	85.5	4.4	137
P6KE110A	P6KE110CA	105	116	1	1	94	3.9	152
P6KE120A	P6KE120CA	114	126	1	1	102	3.6	165
P6KE130A	P6KE130CA	124	137	1	1	111	3.4	179

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R @ V_{WM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
		Min (V)	Max (V)	I_T (mA)				
P6KE150A	P6KE150CA	143	158	1	1	128	2.9	207
P6KE160A	P6KE160CA	152	168	1	1	136	2.7	219
P6KE170A	P6KE170CA	162	179	1	1	145	2.6	234
P6KE180A	P6KE180CA	171	189	1	1	154	2.4	246
P6KE200A	P6KE200CA	190	210	1	1	171	2.2	274
P6KE220A	P6KE220CA	209	231	1	1	185	1.8	328
P6KE250A	P6KE250CA	237	263	1	1	214	1.7	344
P6KE300A	P6KE300CA	285	315	1	1	256	1.4	414
P6KE350A	P6KE350CA	333	368	1	1	300	1.2	482
P6KE400A	P6KE400CA	380	420	1	1	342	1.1	548
P6KE440A	P6KE440CA	418	462	1	1	376	1	602
P6KE500A	P6KE500CA	475	525	1	1	427.5	0.87	690
P6KE520A	P6KE520CA	494	546	1	1	444.6	0.84	714
P6KE540A	P6KE540CA	513	567	1	1	459	0.81	741
P6KE550A	P6KE550CA	522.5	577	1	1	470	0.79	759
P6KE600A	P6KE600CA	570	630	1	1	513	0.72	833

Note:

For bi-directional types having VWM of 10 V and less, the I_R limit is doubled

■ Characteristics (Typical)

FIG1:Peak Pulse Power Rating Curve

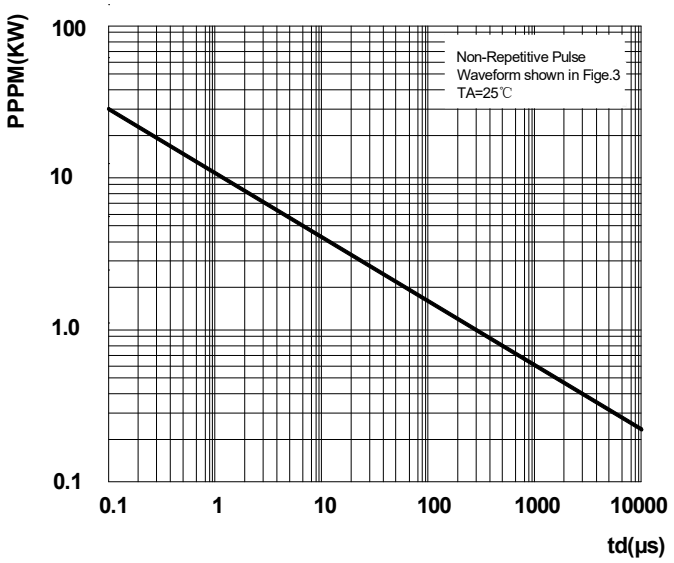


FIG2: Pulse Power or Current vs. Initial Junction Temperature

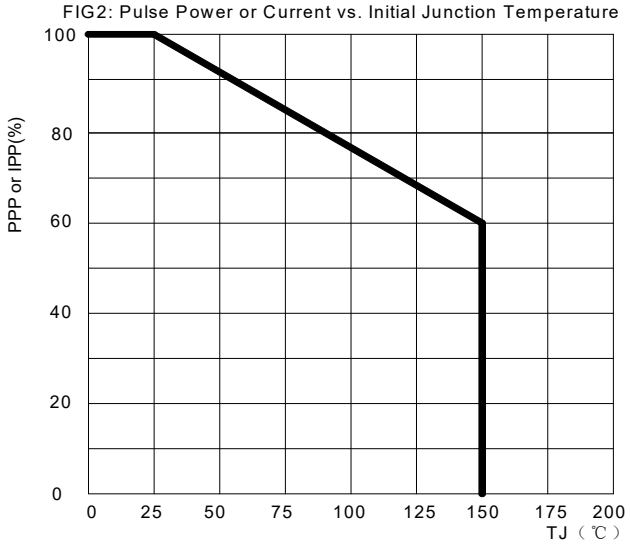


FIG3: Pulse Waveform

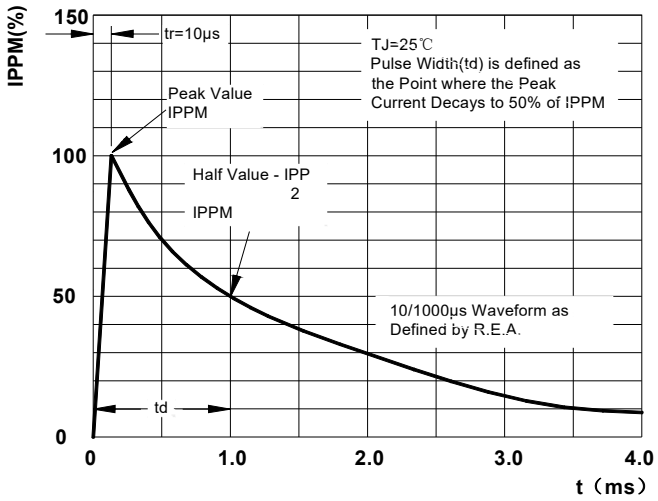


FIG4: Power Derating Curve

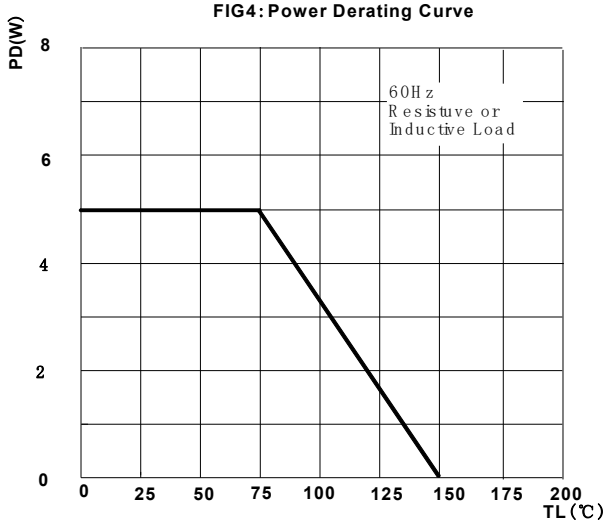


FIG5: Maximum Non-Repetitive Surge Current

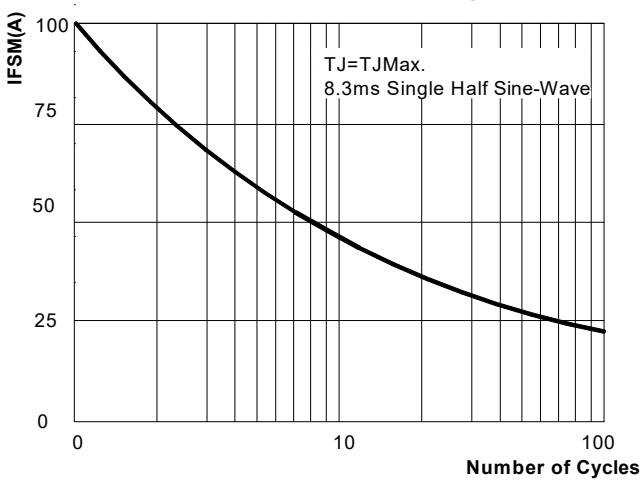
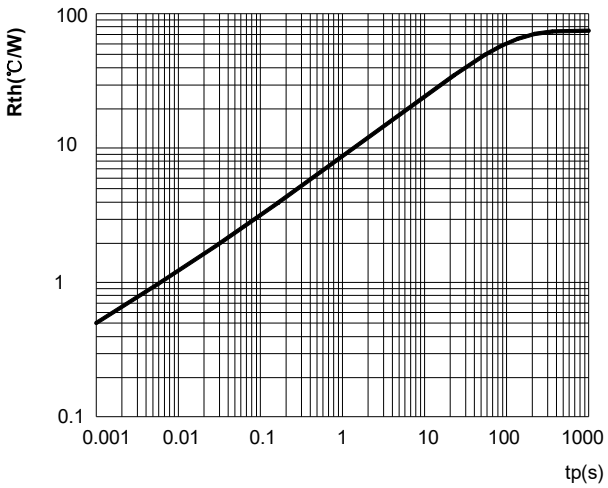
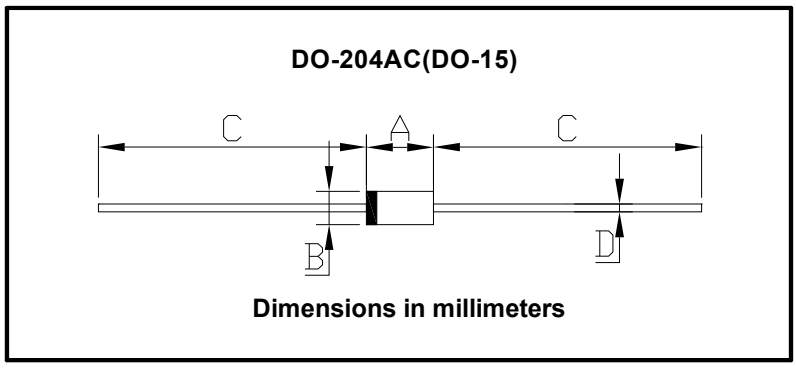


FIG6:Typical Transient Thermal Impedance



■ Outline Dimensions



DO-204AC(DO-15)		
Dim	Min	Max
A	5.80	7.60
B	2.60	3.60
C	25.4	/
D	0.70	0.90

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