



DATA SHEET

P6SMBJ SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE 5.0 to 220 Volts **PEAK PULSE POWER** 600 Watts

SMB/DO-214AA

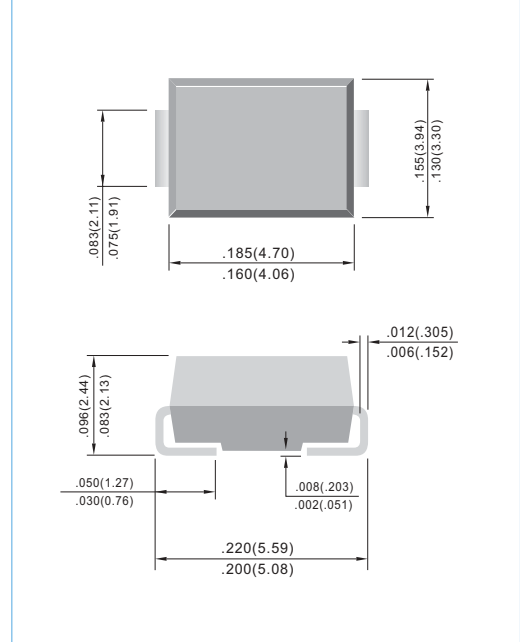
Unit: inch (mm)

FEATURES

- For surface mounted applications in order to optimize board space.
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Typical I_D less than 1.0 μ A above 10V
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- Pb free product are available : 99% Sn above can meet Rohs environment substance directive request

MECHANICAL DATA

Case: JEDEC DO-214AA, Molded plastic over passivated junction.
 Terminals: Solder plated, solderable per MIL-STD-202G, Method 208
 Polarity: Color band denotes positive end (cathode)
 Standard Packaging: 12mm tape (EIA-481)
 Weight: 0.003 ounce, 0.093 gram



DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types P6SMBJ5.0 thru types P6SMBJ220.
 Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.
 For Capacitive load derate current by 20%.

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 μ s waveform (Notes 1,2, Fig.1)	P _{PPM}	Min. 600	Watts
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) (Notes 2,3)	I _{FSM}	100	Amps
Peak Pulse Current on 10/1000s waveform (Note 1) Fig.3	I _{PPM}	see Table 1	Amps
Operating Junction and Storage Temperature Range	T _J /T _{STG}	-55 to +150	°C

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A = 25 °C per Fig. 2.
2. Mounted on 5.0mm² (0.13mm thick) land areas.
3. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.



Part Number	Part Number	Marking code		V _{VRM}	V _{BR} @ I _F			I _E @ V _{VRM}		V _C @ I _{EP}		PACKAGE
					Min.	Max.	I _F	UNI-	BI-	V	A	
					V	V	mA	uA	uA	V	A	
600W Transient Voltage Suppressor												
P6SMBJ5.0	P6SMBJ5.0C	KD	AD	5.0	6.40	7.55	10	800	1600	9.6	62.5	SMBDO-214AA
P6SMBJ5.0A	P6SMBJ5.0CA	KE	AE	5.0	6.40	7.25	10	800	1600	9.2	65.2	SMBDO-214AA
P6SMBJ6.0	P6SMBJ6.0C	KF	AF	6.0	6.67	8.45	10	800	1600	11.4	52.6	SMBDO-214AA
P6SMBJ6.0A	P6SMBJ6.0CA	KG	AG	6.0	6.67	7.67	10	800	1600	10.3	58.3	SMBDO-214AA
P6SMBJ6.5	P6SMBJ6.5C	KH	AH	6.5	7.22	9.14	10	500	1000	12.3	48.7	SMBDO-214AA
P6SMBJ6.5A	P6SMBJ6.5CA	KK	AK	6.5	7.22	8.30	10	500	1000	11.2	53.6	SMBDO-214AA
P6SMBJ7.0	P6SMBJ7.0C	KL	AL	7.0	7.78	9.86	10	200	400	13.3	45.1	SMBDO-214AA
P6SMBJ7.0A	P6SMBJ7.0CA	KM	AM	7.0	7.78	8.95	10	200	400	12.0	50.0	SMBDO-214AA
P6SMBJ7.5	P6SMBJ7.5C	KN	AN	7.5	8.33	10.67	1.0	100	200	14.3	42.0	SMBDO-214AA
P6SMBJ7.5A	P6SMBJ7.5CA	KP	AP	7.5	8.33	9.58	1.0	100	200	12.9	46.5	SMBDO-214AA
P6SMBJ8.0	P6SMBJ8.0C	KQ	AQ	8.0	8.89	11.30	1.0	50	100	15.0	40.0	SMBDO-214AA
P6SMBJ8.0A	P6SMBJ8.0CA	KR	AR	8.0	8.89	10.23	1.0	50	100	13.6	44.1	SMBDO-214AA
P6SMBJ8.5	P6SMBJ8.5C	KS	AS	8.5	9.44	11.92	1.0	10	20	15.9	37.7	SMBDO-214AA
P6SMBJ8.5A	P6SMBJ8.5CA	KT	AT	8.5	9.44	10.82	1.0	10	20	14.4	41.7	SMBDO-214AA
P6SMBJ9.0	P6SMBJ9.0C	KU	AU	9.0	10.0	12.6	1.0	5	10	16.9	35.5	SMBDO-214AA
P6SMBJ9.0A	P6SMBJ9.0CA	KV	AV	9.0	10.0	11.5	1.0	5	10	15.4	39.0	SMBDO-214AA
P6SMBJ10	P6SMBJ10C	KW	AW	10	11.1	14.1	1.0	5	5	18.8	31.9	SMBDO-214AA
P6SMBJ10A	P6SMBJ10CA	KX	AX	10	11.1	12.8	1.0	5	5	17.0	35.3	SMBDO-214AA
P6SMBJ11	P6SMBJ11C	KY	AY	11	12.2	15.4	1.0	5	5	20.1	29.9	SMBDO-214AA
P6SMBJ11A	P6SMBJ11CA	KZ	AZ	11	12.2	14.0	1.0	5	5	18.2	33.0	SMBDO-214AA
P6SMBJ12	P6SMBJ12C	LD	BD	12	13.3	16.9	1.0	5	5	22.0	27.3	SMBDO-214AA
P6SMBJ12A	P6SMBJ12CA	LE	BE	12	13.3	15.3	1.0	5	5	19.9	30.2	SMBDO-214AA
P6SMBJ13	P6SMBJ13C	LF	BF	13	14.4	18.2	1.0	1	1	23.8	25.2	SMBDO-214AA
P6SMBJ13A	P6SMBJ13CA	LG	BG	13	14.4	16.5	1.0	1	1	21.5	27.9	SMBDO-214AA
P6SMBJ14	P6SMBJ14C	LH	BH	14	15.6	19.8	1.0	1	1	25.8	23.3	SMBDO-214AA
P6SMBJ14A	P6SMBJ14CA	LK	BK	14	15.6	17.9	1.0	1	1	23.2	25.8	SMBDO-214AA
P6SMBJ15	P6SMBJ15C	LL	BL	15	16.7	21.1	1.0	1	1	26.9	22.3	SMBDO-214AA
P6SMBJ15A	P6SMBJ15CA	LM	BM	15	16.7	19.2	1.0	1	1	24.4	24.0	SMBDO-214AA
P6SMBJ16	P6SMBJ16C	LN	BN	16	17.8	22.6	1.0	1	1	28.8	20.8	SMBDO-214AA
P6SMBJ16A	P6SMBJ16CA	LP	BP	16	17.8	20.5	1.0	1	1	26.0	23.1	SMBDO-214AA
P6SMBJ17	P6SMBJ17C	LQ	BQ	17	18.9	23.9	1.0	1	1	30.5	19.7	SMBDO-214AA
P6SMBJ17A	P6SMBJ17CA	LR	BR	17	18.9	21.7	1.0	1	1	27.6	21.7	SMBDO-214AA
P6SMBJ18	P6SMBJ18C	LS	BS	18	20.0	25.3	1.0	1	1	32.2	18.6	SMBDO-214AA
P6SMBJ18A	P6SMBJ18CA	LT	BT	18	20.0	23.3	1.0	1	1	29.2	20.5	SMBDO-214AA
P6SMBJ20	P6SMBJ20C	LU	BU	20	22.2	28.1	1.0	1	1	35.8	16.7	SMBDO-214AA
P6SMBJ20A	P6SMBJ20CA	LV	BV	20	22.2	25.5	1.0	1	1	32.4	18.5	SMBDO-214AA
P6SMBJ22	P6SMBJ22C	LW	BW	22	24.4	30.9	1.0	1	1	39.4	15.2	SMBDO-214AA
P6SMBJ22A	P6SMBJ22CA	LX	BX	22	24.4	28.0	1.0	1	1	35.5	16.9	SMBDO-214AA
P6SMBJ24	P6SMBJ24C	LY	BY	24	26.7	33.8	1.0	1	1	43.0	14.0	SMBDO-214AA
P6SMBJ24A	P6SMBJ24CA	LZ	BZ	24	26.7	30.7	1.0	1	1	38.9	15.4	SMBDO-214AA
P6SMBJ26	P6SMBJ26C	MD	CD	26	28.9	36.6	1.0	1	1	46.6	12.4	SMBDO-214AA
P6SMBJ26A	P6SMBJ26CA	ME	CE	26	28.9	33.2	1.0	1	1	42.1	14.2	SMBDO-214AA
P6SMBJ28	P6SMBJ28C	MF	CF	28	31.1	39.4	1.0	1	1	50.0	12.0	SMBDO-214AA
P6SMBJ28A	P6SMBJ28CA	MG	CG	28	31.1	35.8	1.0	1	1	45.4	13.2	SMBDO-214AA
P6SMBJ30	P6SMBJ30C	MH	CH	30	33.3	42.2	1.0	1	1	53.5	11.2	SMBDO-214AA
P6SMBJ30A	P6SMBJ30CA	MK	CK	30	33.3	38.3	1.0	1	1	48.4	12.4	SMBDO-214AA
P6SMBJ33	P6SMBJ33C	ML	CL	33	36.7	46.5	1.0	1	1	59.0	10.2	SMBDO-214AA
P6SMBJ33A	P6SMBJ33CA	MM	CM	33	36.7	42.2	1.0	1	1	53.3	11.3	SMBDO-214AA
P6SMBJ36	P6SMBJ36C	MN	CN	36	40.0	50.7	1.0	1	1	64.3	9.3	SMBDO-214AA
P6SMBJ36A	P6SMBJ36CA	MP	CP	36	40.0	46.0	1.0	1	1	58.1	10.3	SMBDO-214AA
P6SMBJ40	P6SMBJ40C	MQ	CQ	40	44.4	56.3	1.0	1	1	71.4	8.4	SMBDO-214AA
P6SMBJ40A	P6SMBJ40CA	MR	CR	40	44.4	51.1	1.0	1	1	64.5	9.3	SMBDO-214AA



Part Number	Part Number	Marking Code		V _{RRM}	V _{BR} @ I _T			I _T @ V _{RRM}		V _C @ I _{EP}		PACKAGE
		UNI-	BI-		Min.	Max.	I _T	UNI-	BI-	V	A	
UNI-	BI-	UNI-	BI-	V	V	V	mA	uA	uA	V	A	
600W Transient Voltage Suppressor												
P6SMBJ43	P6SMBJ43C	MS	CS	43	47.8	60.5	1.0	1	1	76.7	7.8	SMBDO-214AA
P6SMBJ43A	P6SMBJ43CA	MT	CT	43	47.8	54.9	1.0	1	1	69.4	8.6	SMBDO-214AA
P6SMBJ45	P6SMBJ45C	MU	CU	45	50.0	63.3	1.0	1	1	80.3	7.5	SMBDO-214AA
P6SMBJ45A	P6SMBJ45CA	MV	CV	45	50.0	57.5	1.0	1	1	72.7	8.3	SMBDO-214AA
P6SMBJ48	P6SMBJ48C	MW	CW	48	53.3	67.5	1.0	1	1	85.5	7.0	SMBDO-214AA
P6SMBJ48A	P6SMBJ48CA	MX	CX	48	53.3	61.3	1.0	1	1	77.4	7.7	SMBDO-214AA
P6SMBJ51	P6SMBJ51C	MY	CY	51	56.7	71.8	1.0	1	1	91.1	6.6	SMBDO-214AA
P6SMBJ51A	P6SMBJ51CA	MZ	CZ	51	56.7	65.2	1.0	1	1	82.4	7.3	SMBDO-214AA
P6SMBJ54	P6SMBJ54C	ND	DD	54	60.0	76.0	1.0	1	1	96.3	6.2	SMBDO-214AA
P6SMBJ54A	P6SMBJ54CA	NE	DE	54	60.0	69.0	1.0	1	1	87.1	6.9	SMBDO-214AA
P6SMBJ58	P6SMBJ58C	NF	DF	58	64.4	81.6	1.0	1	1	103	5.8	SMBDO-214AA
P6SMBJ58A	P6SMBJ58CA	NG	DG	58	64.4	74.1	1.0	1	1	93.6	6.4	SMBDO-214AA
P6SMBJ60	P6SMBJ60C	NH	DH	60	66.7	84.5	1.0	1	1	107	5.6	SMBDO-214AA
P6SMBJ60A	P6SMBJ60CA	NK	DK	60	66.7	76.7	1.0	1	1	96.8	6.2	SMBDO-214AA
P6SMBJ64	P6SMBJ64C	NL	DL	64	71.1	90.1	1.0	1	1	114	5.3	SMBDO-214AA
P6SMBJ64A	P6SMBJ64CA	NM	DM	64	71.1	81.8	1.0	1	1	103	5.8	SMBDO-214AA
P6SMBJ70	P6SMBJ70C	NN	DN	70	77.8	98.6	1.0	1	1	125	4.8	SMBDO-214AA
P6SMBJ70A	P6SMBJ70CA	NP	DP	70	77.8	89.5	1.0	1	1	113	5.3	SMBDO-214AA
P6SMBJ75	P6SMBJ75C	NQ	DQ	75	83.3	105.7	1.0	1	1	134	4.5	SMBDO-214AA
P6SMBJ75A	P6SMBJ75CA	NR	DR	75	83.3	95.8	1.0	1	1	121	4.9	SMBDO-214AA
P6SMBJ78	P6SMBJ78C	NS	DS	78	86.7	109.8	1.0	1	1	139	4.3	SMBDO-214AA
P6SMBJ78A	P6SMBJ78CA	NT	DT	78	86.7	99.7	1.0	1	1	126	4.7	SMBDO-214AA
P6SMBJ85	P6SMBJ85C	NU	DU	85	94.4	119.2	1.0	1	1	151	3.9	SMBDO-214AA
P6SMBJ85A	P6SMBJ85CA	NV	DV	85	94.4	108.2	1.0	1	1	137	4.4	SMBDO-214AA
P6SMBJ90	P6SMBJ90C	NW	DW	90	100	126.5	1.0	1	1	160	3.8	SMBDO-214AA
P6SMBJ90A	P6SMBJ90CA	NX	DX	90	100	115.5	1.0	1	1	146	4.1	SMBDO-214AA
P6SMBJ100	P6SMBJ100C	NY	DY	100	111	141.0	1.0	1	1	179	3.4	SMBDO-214AA
P6SMBJ100A	P6SMBJ100CA	NZ	DZ	100	111	128.0	1.0	1	1	162	3.7	SMBDO-214AA
P6SMBJ110	P6SMBJ110C	PD	ED	110	122	154.5	1.0	1	1	196	3.0	SMBDO-214AA6
P6SMBJ110A	P6SMBJ110CA	PE	EE	110	122	140.5	1.0	1	1	177	3.4	SMBDO-214AA
P6SMBJ120	P6SMBJ120C	PF	EF	120	133	169.0	1.0	1	1	214	2.8	SMBDO-214AA
P6SMBJ120A	P6SMBJ120CA	PG	EG	120	133	153.0	1.0	1	1	193	3.1	SMBDO-214AA
P6SMBJ130	P6SMBJ130C	PH	EH	130	144	182.5	1.0	1	1	231	2.6	SMBDO-214AA
P6SMBJ130A	P6SMBJ130CA	PK	EK	130	144	165.5	1.0	1	1	209	2.9	SMBDO-214AA
P6SMBJ150	P6SMBJ150C	PL	EL	150	167	211.5	1.0	1	1	268	2.2	SMBDO-214AA
P6SMBJ150A	P6SMBJ150CA	PM	EM	150	167	192.5	1.0	1	1	243	2.5	SMBDO-214AA
P6SMBJ160	P6SMBJ160C	PN	EN	160	178	226.0	1.0	1	1	287	2.1	SMBDO-214AA
P6SMBJ160A	P6SMBJ160CA	PP	EP	160	178	205.0	1.0	1	1	259	2.3	SMBDO-214AA
P6SMBJ170	P6SMBJ170C	PQ	EQ	170	189	239.5	1.0	1	1	304	2.0	SMBDO-214AA
P6SMBJ170A	P6SMBJ170CA	PR	ER	170	189	217.5	1.0	1	1	275	2.2	SMBDO-214AA
P6SMBJ180	P6SMBJ180C	PS	ES	180	198	253.8	1.0	1	1	322	1.9	SMBDO-214AA
P6SMBJ180A	P6SMBJ180CA	PT	ET	180	198	230.4	1.0	1	1	292	2.1	SMBDO-214AA
P6SMBJ190	P6SMBJ190C	PU	EU	190	209	267.9	1.0	1	1	340	1.8	SMBDO-214AA
P6SMBJ190A	P6SMBJ190CA	PV	EV	190	209	243.2	1.0	1	1	308	2.0	SMBDO-214AA
P6SMBJ200	P6SMBJ200C	PW	EW	200	220	282	1.0	1	1	358	1.7	SMBDO-214AA
P6SMBJ200A	P6SMBJ200CA	PX	EX	200	220	256	1.0	1	1	324	1.9	SMBDO-214AA
P6SMBJ210	P6SMBJ210C	PY	EY	210	231	296.1	1.0	1	1	376	1.6	SMBDO-214AA
P6SMBJ210A	P6SMBJ210CA	PZ	EZ	210	231	268.8	1.0	1	1	340	1.8	SMBDO-214AA
P6SMBJ220	P6SMBJ220C	QD	FD	220	242	310.2	1.0	1	1	394	1.5	SMBDO-214AA
P6SMBJ220A	P6SMBJ220CA	QE	FE	220	242	281.6	1.0	1	1	356	1.7	SMBDO-214AA

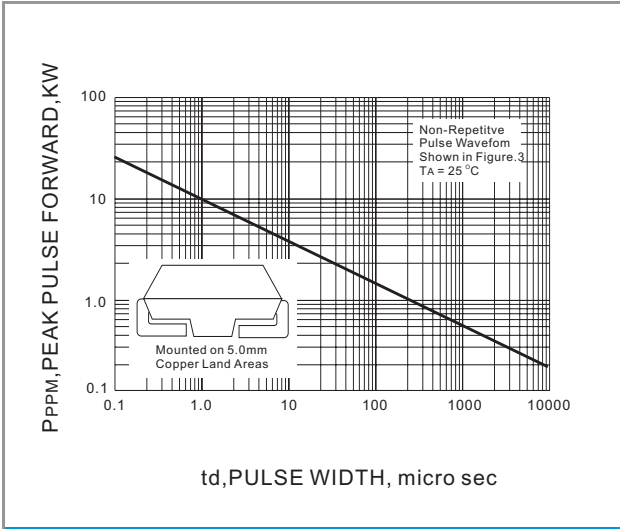


Fig.1 PEAK POWER RATING CURVE

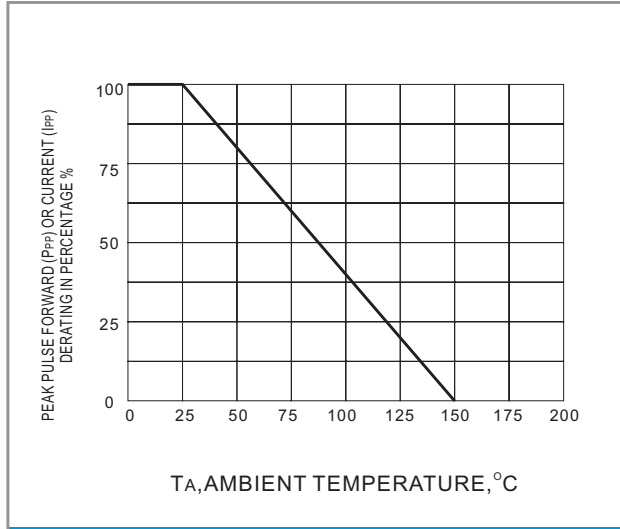


Fig.2 DERATING CURVE

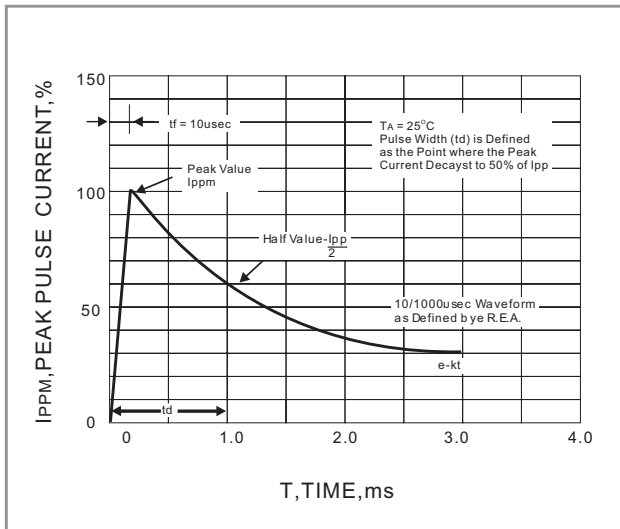


Fig.3 PULSE WAVEFORM

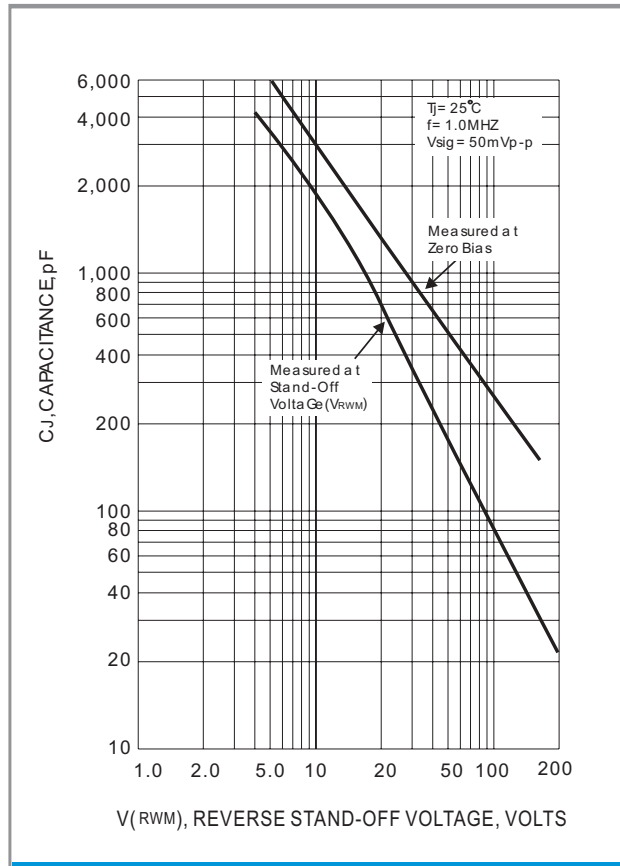


Fig.4 TYPICAL CAPACITANCE

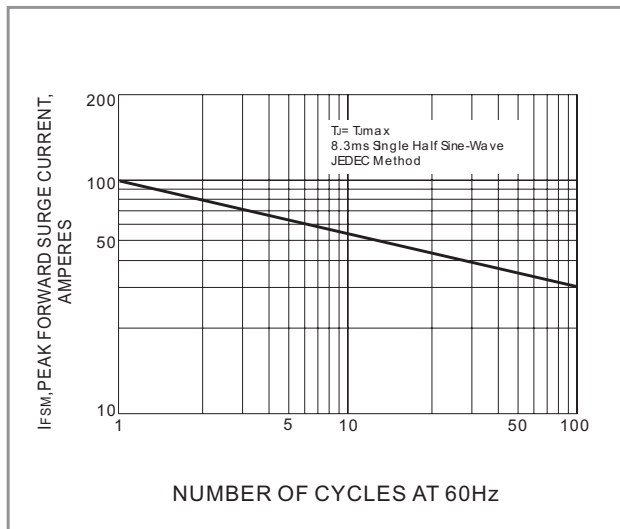


Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT