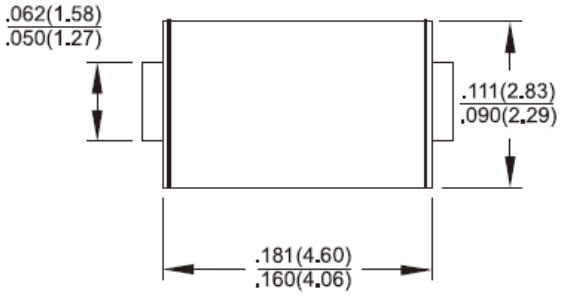
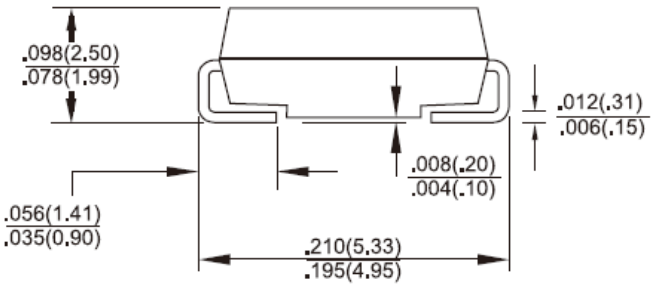
TAIWAN SEMICONDUCTOR

1SMA4737 - 1SMA200Z

1.0 Watt Surface Mount Silicon Zener Diodes

SMA/DO-214AC





Dimensions in inches and (millimeters)

Features

- ✧ Qualified as per AEC-Q101
- ✧ For surface mounted applications in order to optimize board space
- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Glass passivated junction
- ✧ Low inductance
- ✧ Typical I_R less than 1uA above 11V
- ✧ High temperature soldering guaranteed: 260℃ / 10 seconds at terminals
- ✧ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- ✧ Case: Molded plastic over passivated junction
- ✧ Terminals: Pure tin plated lead free, solderable per MIL-STD-750, Method 2025
- ✧ Polarity: Color Band denotes positive end (cathode)
- ✧ Standard packaging: 12mm tape (EIA-481)
- ✧ Weight: 0.064 gram

Marking Diagram

XXXA	= Specific Device Code
G	= Green Compound
Y	= Year
WW	= Work Week

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Unit
Power Dissipation, R_{THJA}<30K/W, T_A=60℃	P_D	3	Watts
Power Dissipation, R_{THJA}<100K/W, T_A=25℃	P_D	1.25	Watts
Non Repetitive Peak Power Dissipation(Note 1)	P_{ZSM}	60	Watts
Non Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	10	Amps
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	℃

Note 1: Non Repetitive Peak surge PD Test Condition: tp=100uS sq. pulse, TA=25℃ prior to surge

ELECTRICAL CHARACTERISTICS (TA=25℃ unless otherwise noted)

Device (Note 1)	Device Marking code	Nominal Zener Voltage	Test Current	Zener Impedance			Leakage Current		Surge current T_A=25℃
		$Vz@Iz_T$	I_{ZT}	$Z_{ZT}@I_{ZT}$	$Z_{ZK}@I_{ZK}$		$I_R@V_R$		I_R
		V	mA	Ω	Ω	mA	uA	V	mA
		(Note 2) (Note 3)					Max.		
1SMA4737	737A	7.5	34	4	700	0.50	5	5.0	605
1SMA4738	738A	8.2	31	4.5	700	0.50	5	6.0	550
1SMA4739	739A	9.1	28	5	700	0.50	5	7.0	500
1SMA4740	740A	10	25	7	700	0.25	5	7.6	454
1SMA4741	741A	11	23	8	700	0.25	1	8.4	414
1SMA4742	742A	12	21	9	700	0.25	1	9.1	380
1SMA4743	743A	13	19	10	700	0.25	1	9.9	344
1SMA4744	744A	15	17	14	700	0.25	1	11.4	304
1SMA4745	745A	16	15.5	16	700	0.25	1	12.2	285
1SMA4746	746A	18	14.0	20	750	0.25	1	13.7	250
1SMA4747	747A	20	12.5	22	750	0.25	1	15.2	225
1SMA4748	748A	22	11.5	23	750	0.25	1	16.7	205
1SMA4749	749A	24	10.5	25	750	0.25	1	18.2	190
1SMA4750	750A	27	9.5	35	750	0.25	1	20.6	170
1SMA4751	751A	30	8.5	40	1000	0.25	1	22.8	150
1SMA4752	752A	33	7.5	45	1000	0.25	1	25.1	135
1SMA4753	753A	36	7.0	50	1000	0.25	1	27.4	125
1SMA4754	754A	39	6.5	60	1000	0.25	1	29.7	115
1SMA4755	755A	43	6.0	70	1500	0.25	1	32.7	110
1SMA4756	756A	47	5.5	80	1500	0.25	1	35.8	95
1SMA4757	757A	51	5.0	95	1500	0.25	1	38.8	90
1SMA4758	758A	56	4.5	110	2000	0.25	1	42.6	80
1SMA4759	759A	62	4.0	125	2000	0.25	1	47.1	70
1SMA4760	760A	68	3.7	150	2000	0.25	1	51.7	65
1SMA4761	761A	75	3.3	175	2000	0.25	1	56.0	60
1SMA4762	762A	82	3.0	200	3000	0.25	1	62.2	55
1SMA4763	763A	91	2.8	250	3000	0.25	1	69.2	50
1SMA4764	764A	100	2.5	350	3000	0.25	1	76.0	45
1SMA110Z	110A	110	2.3	450	4000	0.25	1	83.6	-
1SMA120Z	120A	120	2.0	550	4500	0.25	1	91.2	-
1SMA130Z	130A	130	1.9	700	5000	0.25	1	98.8	-
1SMA150Z	150A	150	1.7	1000	6000	0.25	1	114.0	-
1SMA160Z	160A	160	1.6	1100	6500	0.25	1	121.6	-
1SMA180Z	180A	180	1.4	1200	7000	0.25	1	136.8	-
1SMA200Z	200A	200	1.2	1500	8000	0.25	1	152.0	-

Notes:

1. Tolerance and Type Number Designation. The type numbers losted have a standard tolerance on the nominal zener voltage of ±5%
2. Specials Available Include:
   A. Nominal zener voltages between the voltages shown and tighter voltage tolerances
   B. Matched sets
3. Zener Voltage (Vz) Measurement. Guarantees the zener voltage when messured at 90 seconds while maintaining the lead temperature(T_L) at 30℃±1℃, from the diode body
4. Zener Impedance (Zz) Derivation. The zener impedance is derives from the 60 cycle AC voltage, which results when an accurrent having and rms value equal to 10% of the DC zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK}
5. Surge Current (I_R) Non-Repetitive. The rating listd in the electrical chatacteristics table is maximum peak, non-repetitive, reverse surge curren of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current, I_{ZT} per JEDEC registration; however, actual device capability is as described in Figure 10

RATINGS AND CHARACTERISTIC CURVES (1SMA4737 THRU 1SMA200Z)

FIG. 1 POWER TEMPERATURE DERATING CURVE

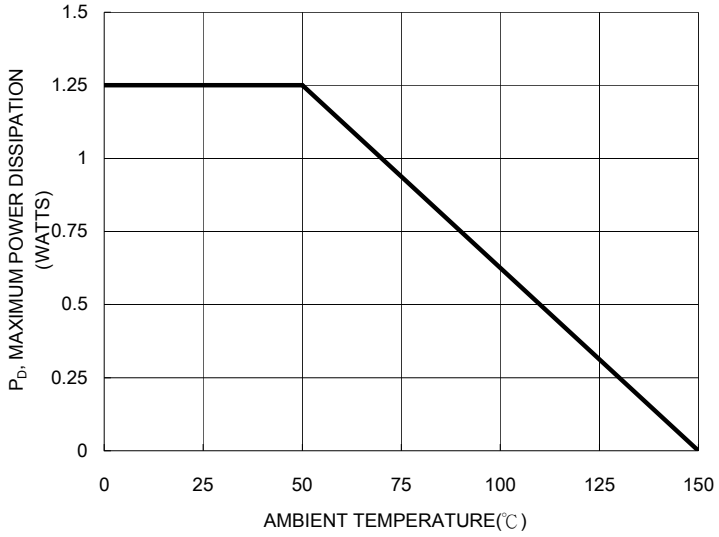


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

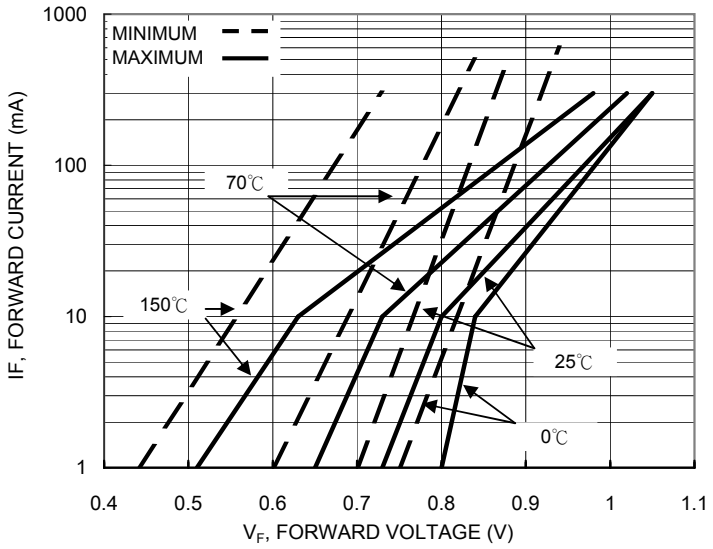


FIG.3 EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

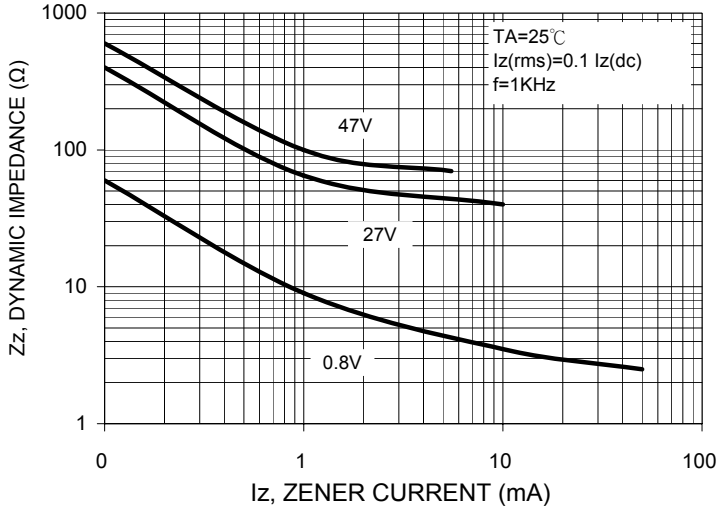


FIG.4 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

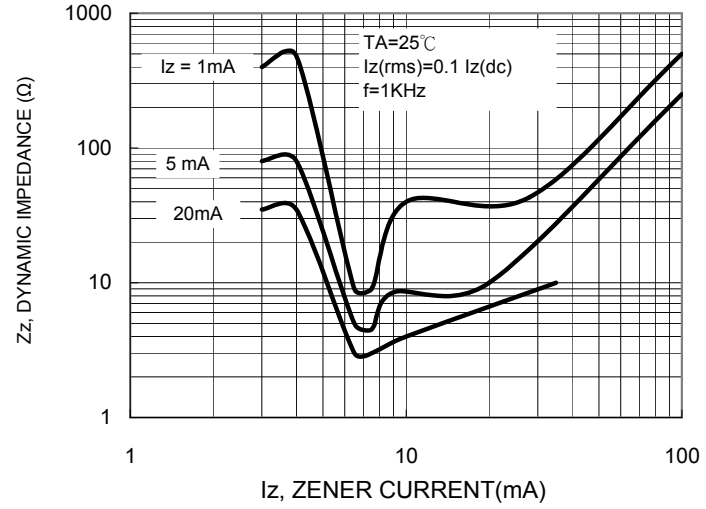
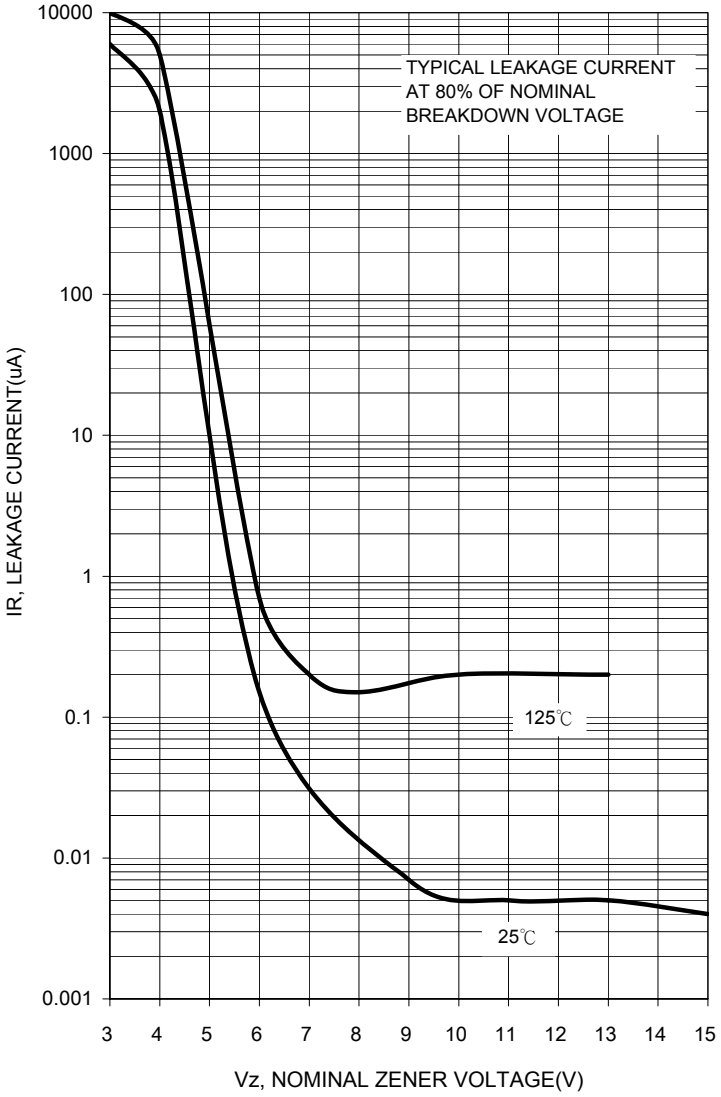


FIG.5 TYPICAL LEAKAGE CURRENT



RATINGS AND CHARACTERISTIC CURVES (1SMA4737 THRU 1SMA200Z)

FIG.6 TYPICAL CAPACITANCE versus Vz

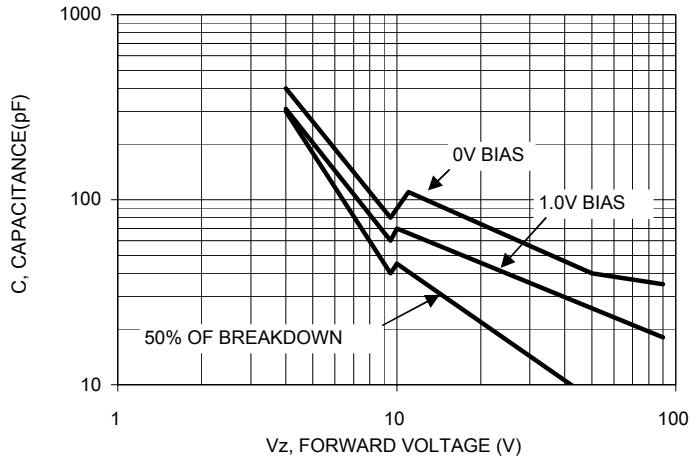


FIG. 7 TEMPERATURE COEFFICIENTS

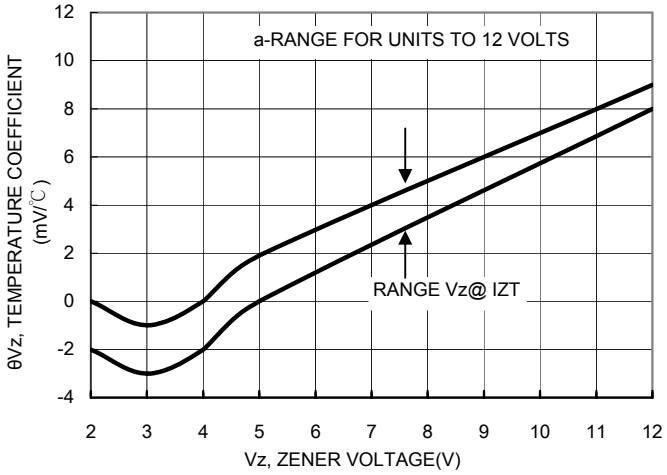


FIG.8 TEMPERATURE COEFFICIENTS

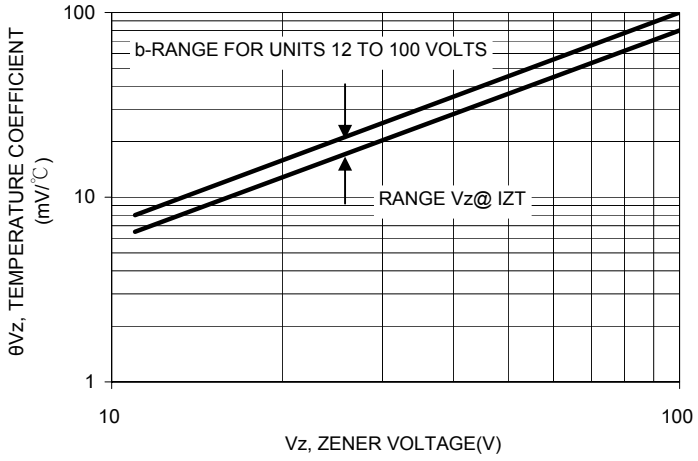


FIG. 9 EFFECT OF ZENER CURRENT

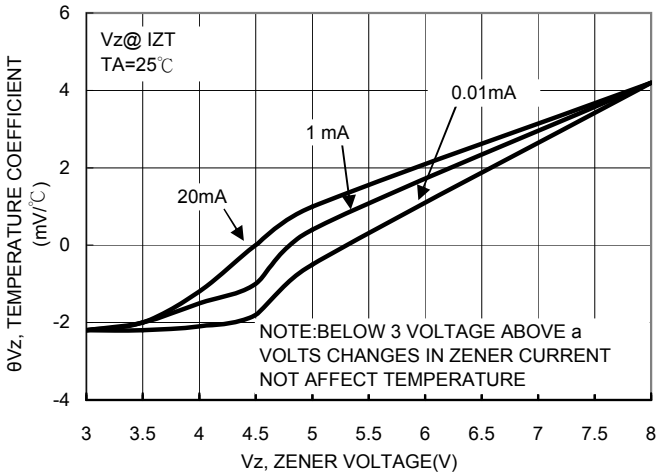
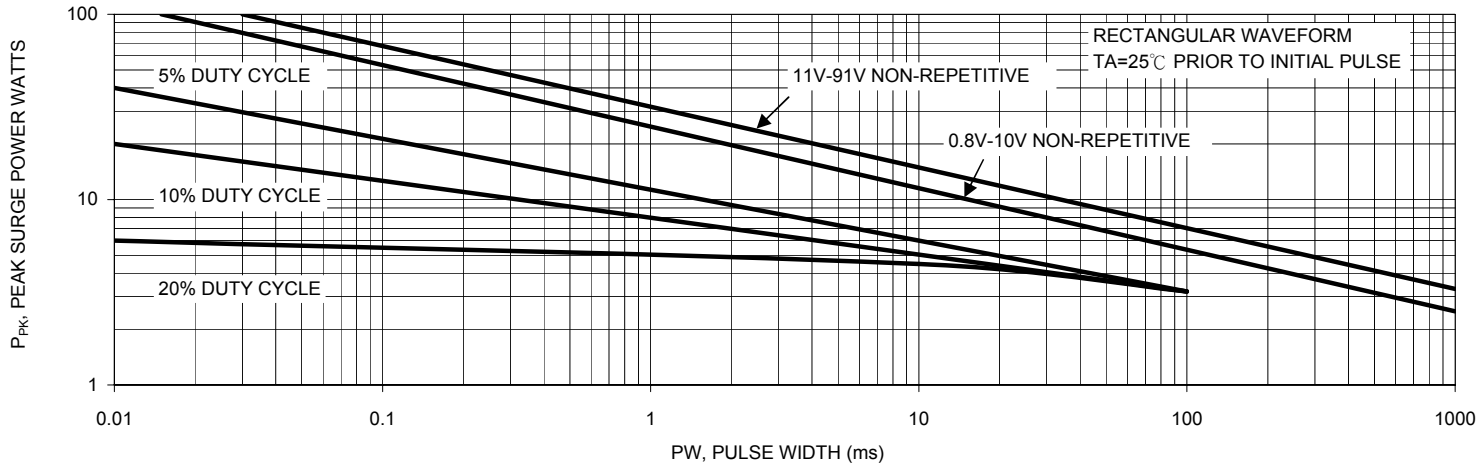


FIG.10 MAXIMUM SURGE POWER



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Zener Diodes ***category:***

Click to view products by Taiwan Semiconductor ***manufacturer:***

Other Similar products are found below :

MMSZ5245BS-7-F RKZ13B2KG#P1 RKZ5.6B2KJ#R1 EDZTE6113B EDZTE6116B EDZTE616.8B 1N747A 1N966B NTE5116A NTE5121A NTE5139A NTE5147A NTE5152A NTE5155A NTE5156A NTE5164A JANS1N4974US SMAJ4764A-TP RKZ5.1BKU#P6 3SMAJ5946B-TP 3SMAJ5950B-TP 3SMBJ5920B-TP 3SMBJ5925B-TP TDZTR24 441774C MMSZ4678-TP MMSZ5232BQ-13-F BZG04-36 BZG05C9V1-HE3-TR HZM30NBTR-E UDZTE-175.1B 3SMAJ5945B-TP 3SMAJ5947B-TP 3SMBJ5941B-TP DL4746A-TP RKZ18B2KK#R1 RKZ10B2KL#R1 RKZ6.8B2KL#R1 RKZ8.2B2KL#R1 DZ2S240M0L SMAZ27-TP SMBZ5920B-E3/52 ZMM3.0 RD16UM-T1-A RD39S-T1-A RD9.1S-T1-A RD10S-T1-A RD20S-T1-A RD2.2S-T1-A RD2.7UM-T1-A