1.3 W Surface Mount Glass Passivated Zener Diode

DO-214AC (SMA)

Voltage	Current
6.2 to 240 V	1.3 W

HYPERECTIFIER®

FEATURES

- Low profile package
- Ideal for automated placement
- Low leakage current
- High surge current and zener capability
- Low differential resistance
- Tolerance series ± 5%
- Low forward voltage drop
- Solder dip 260°C, 10s
- AEC-Q101 qualified
- Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260° C

AUTOMOTIVE GRADE Available

Pb

e3

RoHS COMPLIANT

MECHANICAL DATA

- **Case:** DO-214AC (SMA). Epoxy meets UL 94V-0 flammability rating.
- **Polarity:** Color band denotes cathode end.
- **Terminals:** Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JESD 201 class 1A whisker test.
- **HE3 suffix** for high reliability grade, meets JESD 201 class 2 whisker test.

TYPICAL APPLICATIONS

Used for basic regulation functions in most electronic applications, Zener diodes offer a cheaper alternative to IC solutions.

Maximum Ratings and Electrical Characteristics at 25 °C

P_{tot}	Power dissipation at Tamb = 25 °C $R_{th\ j\text{-}a}$ = 100 °C/W	1.3 W
P_{tot}	Power dissipation at Tamb = 25 °C $R_{th\ j\text{-}a}$ = 25 °C/W	3.25 W
T_j	Operating temperature range	- 65 to + 150 °C
T_{stg}	Storage temperature range	- 65 to + 150 °C
V_F	Max. forward voltage drop at I_F = 0.5 A	1.0 V
$R_{th\ j\text{-}sp}$	Max. Thermal Resistance junction to solder point	20 °C/W
$R_{th\ j\text{-}a}$	Max. Thermal Resistance junction to ambient FR4 PCB standard foot print	200 °C/W
	Max. Thermal Resistance junction to ambient FR4 PCB mounting pad for cathode1cm^2	140 °C/W

Other voltages upon request

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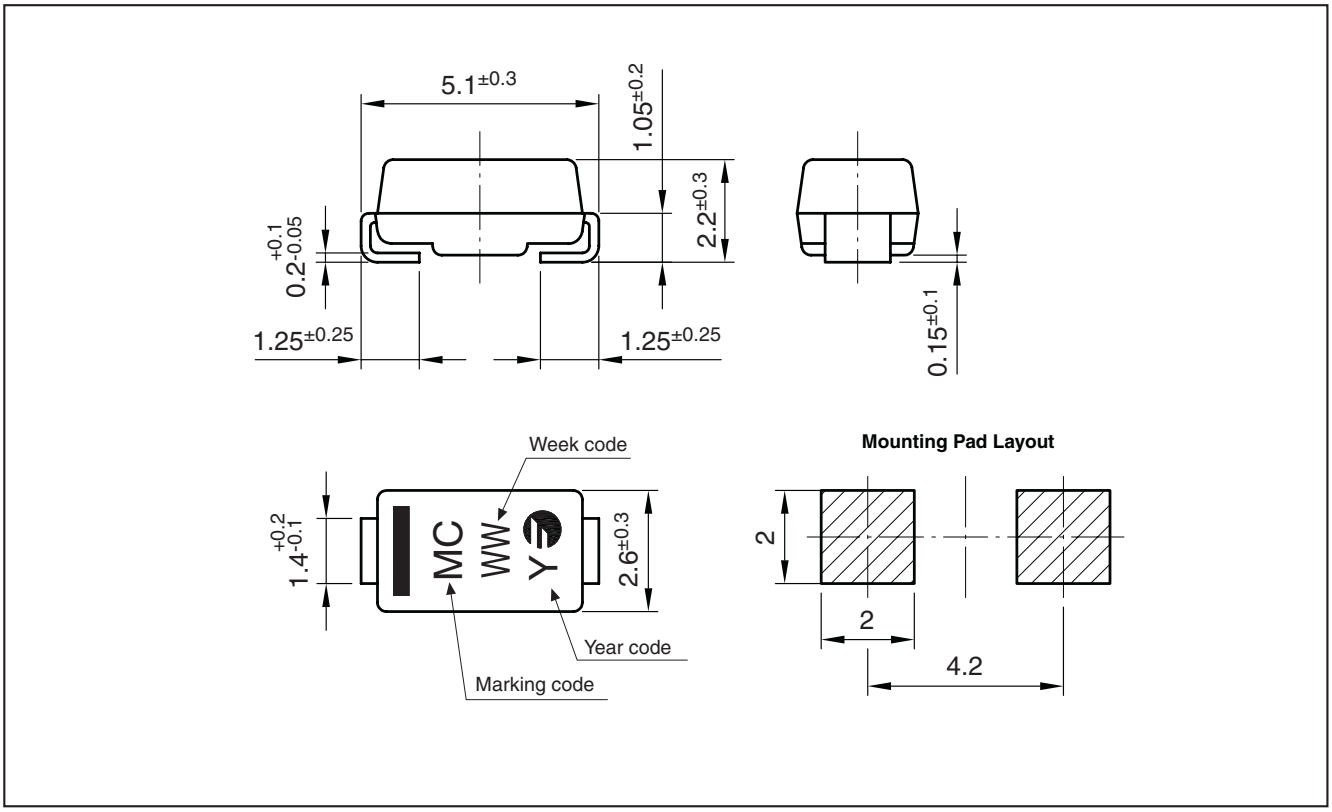
Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
Z1SMA51 TRTB	TRTB	13" diameter tape and reel	7,500	0.060
Z1SMA51 TRTS	TRTS	7" diameter tape and reel	1,500	0.060
Z1SMA51 HE3 TRTB	TRTB	13" diameter tape and reel	7,500	0.060

Package Outline Dimensions: (mm) DO-214AC (SMA)



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Ratings and Characteristics (Ta 25 ºC unless otherwise noted)

Type	Marking Code	Zener (1) Voltage Range V_Z at I_{ZT}	Maximum Zener Impedance Z_{ZT} at I_{ZT}	Typical Temperature Coeficient at I_{ZT}	Test Current I_{ZT}	Max Reverse Leakage Current I_R @ V_R		Max Regulator Current at 45 °C I_{ZM}
		(V)	(Ω)	(% / ºC)	(mA)	(µA)	(V)	(mA)
Z1SMA6V2	EC	5.8-6.6	2	+0.025	100	10	3	161
Z1SMA6V8	EE	6.4-7.2	2.5	+0.035	100	10	4	147
Z1SMA7V5	ED	7.0-7.9	3	+0.035	100	10	5	133
Z1SMA8V2	EF	7.7-8.7	3.5	+0.055	100	10	6	122
Z1SMA9V1	EG	8.5-9.6	4	+0.055	50	10	7	110
Z1SMA10	EH	9.4-10.6	4	+0.070	50	1	7.5	105
Z1SMA11	EK	10.4-11.6	7	+0.075	50	1	8.2	97
Z1SMA12	EL	11.4-12.7	7	+0.075	50	1	9.1	88
Z1SMA13	EM	12.4-14.1	10	+0.075	50	1	10	79
Z1SMA15	EN	13.8-15.6	10	+0.075	50	1	11	71
Z1SMA16	EP	15.3-17.1	15	+0.085	25	1	12	66
Z1SMA18	EQ	16.8-19.1	15	+0.085	25	1	13	62
Z1SMA20	ER	18.8-21.2	15	+0.085	25	1	15	56
Z1SMA22	ES	20.8-23.3	15	+0.085	25	1	16	52
Z1SMA24	ET	22.8-25.6	15	+0.085	25	1	18	47
Z1SMA27	EU	25.1-28.9	15	+0.085	25	1	20	41
Z1SMA30	EV	28-32	15	+0.085	25	1	22	36
Z1SMA33	EW	31-35	15	+0.085	25	1	24	33
Z1SMA36	EX	34-38	40	+0.085	10	1	27	30
Z1SMA39	EY	37-41	40	+0.085	10	1	30	28
Z1SMA43	EZ	40-46	45	+0.095	10	1	33	26
Z1SMA47	FD	44-50	45	+0.095	10	1	36	23
Z1SMA51	FF	48-54	60	+0.095	10	1	39	21
Z1SMA56	FG	52-60	60	+0.095	10	1	43	19
Z1SMA62	FH	58-66	80	+0.105	10	1	47	16
Z1SMA68	FK	64-72	80	+0.105	10	1	51	15
Z1SMA75	FL	70-80	100	+0.105	10	1	56	14
Z1SMA82	FM	77-87	100	+0.105	10	1	62	12
Z1SMA91	FN	85-96	200	+0.110	5	1	68	10
Z1SMA100	FP	94-106	200	+0.110	5	1	75	9.4
Z1SMA110	FQ	104-116	250	+0.110	5	1	82	8.6
Z1SMA120	FR	114-127	250	+0.110	5	1	91	7.8
Z1SMA130	FS	124-141	300	+0.110	5	1	100	7.0
Z1SMA150	FT	138-156	300	+0.110	5	1	110	6.4
Z1SMA160	FU	158-171	350	+0.110	5	1	120	5.8
Z1SMA180	FV	168-191	500	+0.110	5	1	130	5.2
Z1SMA200	FW	188-212	500	+0.110	5	1	150	4.7
Z1SMA220	FE	208-233	2500	+0.110	1	1	160	4.5
Z1SMA240	FZ	228-256	2550	+0.110	1	1	180	4.2

(1) Tested with pulses.
Pulse test: tp ≤ 50 ms; δ < 2%

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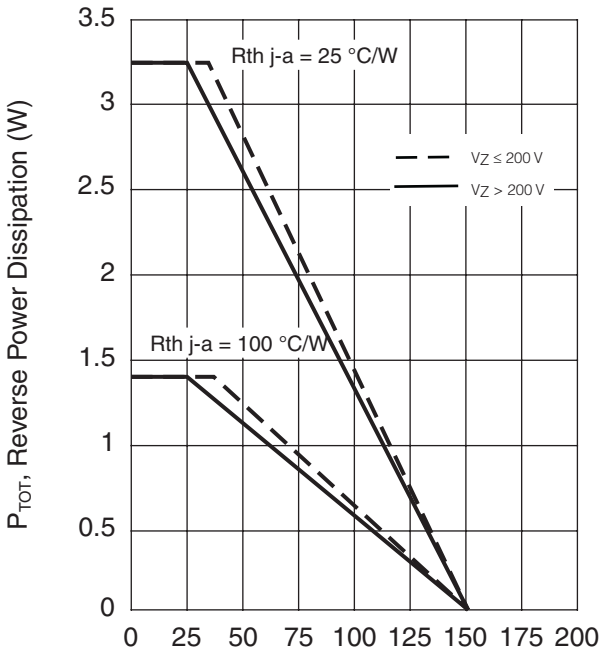
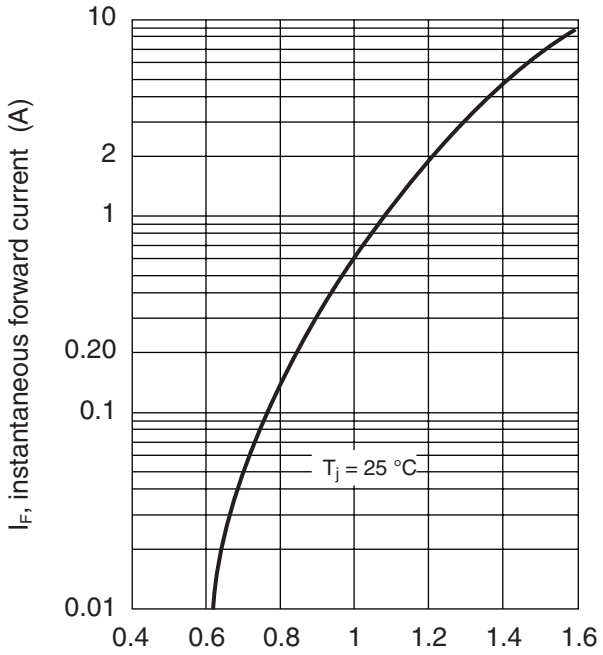
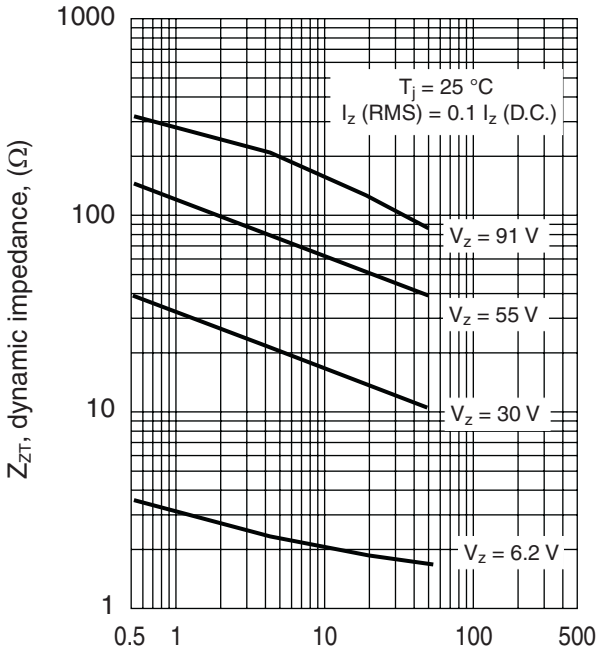
MAXIMUM CONTINUOUS POWER DISSIPATION



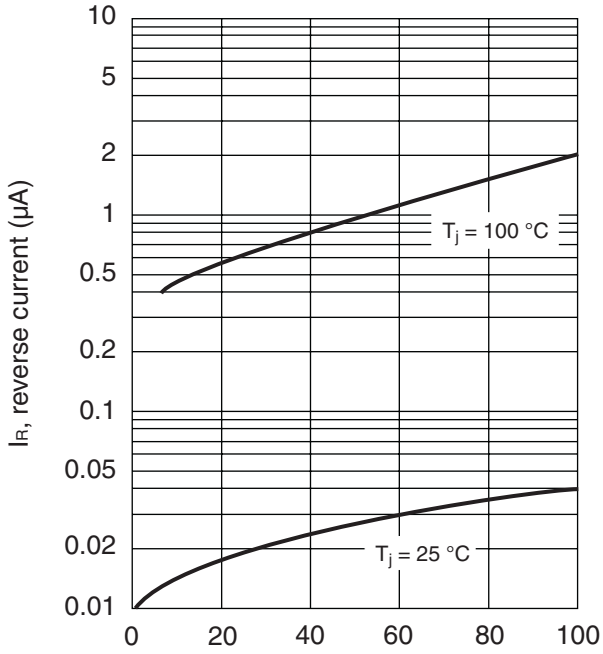
TYPICAL FORWARD CHARACTERISTIC



TYPICAL ZENER IMPEDANCE



TYPICAL REVERSE CHARACTERISTIC



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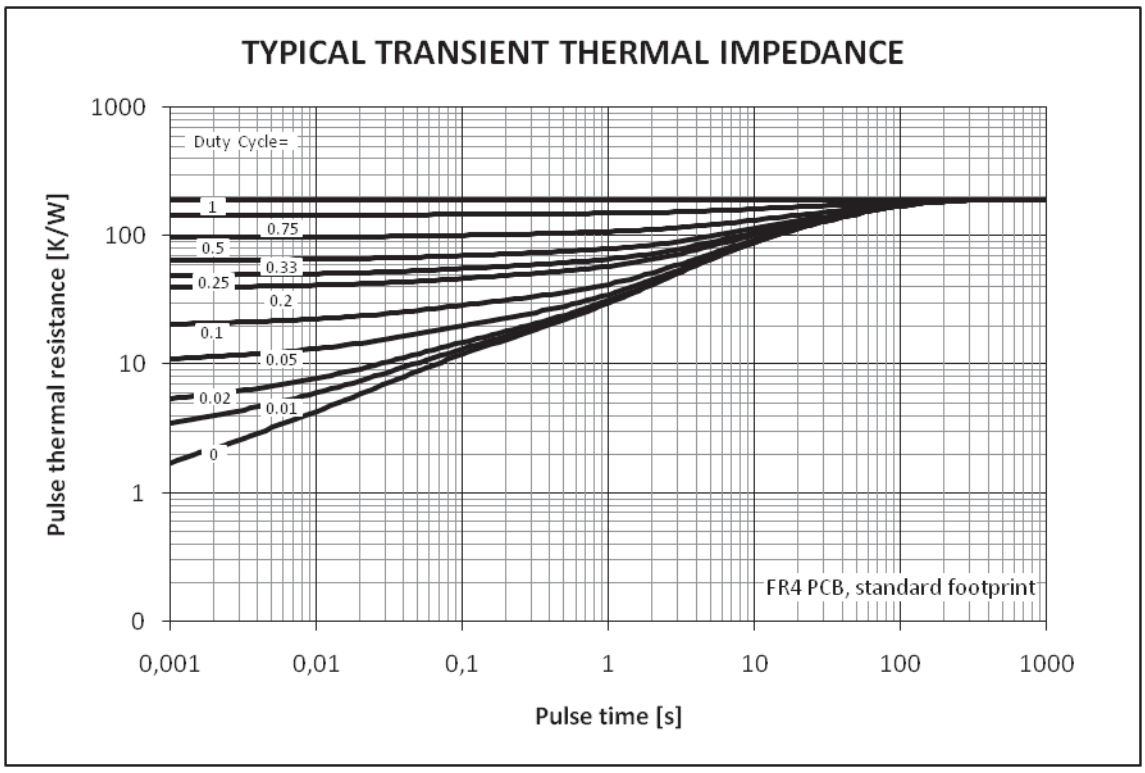

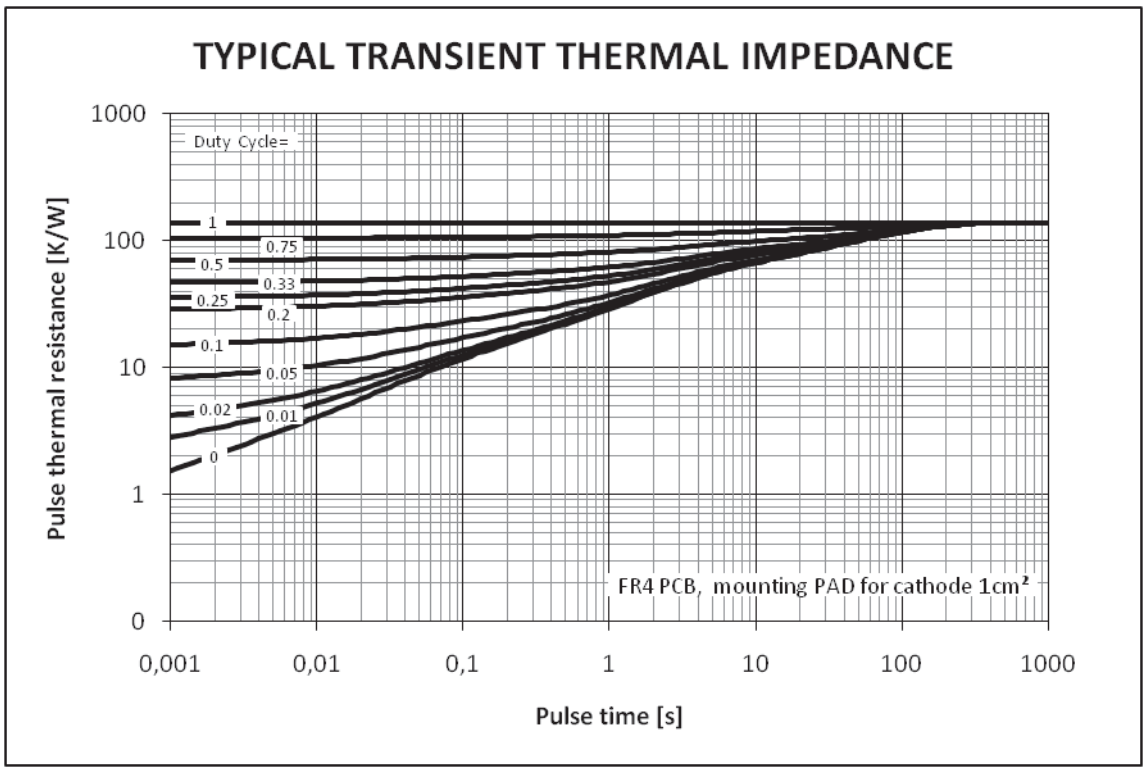

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Revision History

Date	Revision	Description of Changes
15-Apr-2013	0	Original Data Sheet
30-May-2014	1	Update of Maximum Continous Power Dissipation Curve
22-Apr-2016	2	Transient Thermal Impedance

Disclaimer

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