Micro Commercial Components

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20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

1N4678 THRU 1N4717

500mW Silicon Zener Diodes

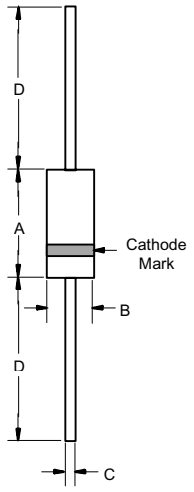
Features

- Zener Voltage 1.8V to 43V
- Very Sharp Reverse Characteristic
- VZ – tolerance ± 5% standard
- High Reliability
- Lead Free Finish/Rohs Compliant (Note1) ("P"Suffix designates Compliant. See ordering information)

Mechanical Data

- Case: Double slug type, hermetically sealed glass
- Marking : Cathode band and type number
- Moisture Sensitivity: Level 1

DO-35



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	---	.166	---	4.2	
B	---	.079	---	2.00	
C	---	.020	---	.52	
D	1.000	---	25.40	---	

Maximum Ratings

	Symbol	Value	Units
Max. Steady State Power Dissipation at T_L<75°C, Lead Length=3/8"	P_D	500	mW
Junction Temperature	T_J	200	℃
Storage Temperature Range	T_{STG}	-65 to 200	℃
Thermal Resistance(Junction to Ambient)	T_{thJA}	300	K/W

Electrical Characteristics @ 25°C Unless Otherwise Specified

	Symbol	Maximum	Unit
Max. Forward Voltage @ I_F=100mA	V_F	1.5	V

Note: 1. Lead in Glass Exemption Applied, see EU Directive Annex 7(C)-I.

Device (1)	Device Marking	Zener Voltage				Leakage Current (2)		I_{ZM} (3)	ΔV_Z (4)
		V_Z (Volts)			@ I_{ZT}	I_R @ V_R			
		Min	Nom	Max	µA	µA Max	Volts	mA	Volts
1N4678	1N4678	1.71	1.8	1.89	50	7.5	1.0	120	0.7
1N4679	1N4679	1.90	2.0	2.10	50	5.0	1.0	110	0.7
1N4680	1N4680	2.09	2.2	2.31	50	5.0	1.0	100	0.75
1N4681	1N4681	2.28	2.4	2.52	50	2.0	1.0	95	0.8
1N4682	1N4682	2.565	2.7	2.835	50	1.0	1.0	90	0.85
1N4683	1N4683	2.85	3.0	3.15	50	0.8	1.0	85	0.9
1N4684	1N4684	3.135	3.3	3.465	50	7.5	1.5	80	0.95
1N4685	1N4685	3.42	3.6	3.78	50	7.5	2.0	75	0.95
1N4686	1N4686	3.705	3.9	4.095	50	5.0	2.0	70	0.97
1N4687	1N4687	4.085	4.3	4.515	50	4.0	2.0	65	0.99
1N4688	1N4688	4.465	4.7	4.935	50	10	3.0	60	0.99
1N4689	1N4689	4.845	5.1	5.355	50	10	3.0	55	0.97
1N4690	1N4690	5.32	5.6	5.88	50	10	4.0	50	0.96
1N4691	1N4691	5.89	6.2	6.51	50	10	5.0	45	0.95
1N4692	1N4692	6.46	6.8	7.14	50	10	5.1	35	0.9
1N4693	1N4693	7.125	7.5	7.875	50	10	5.7	31.8	0.75
1N4694	1N4694	7.79	8.2	8.61	50	1.0	6.2	29	0.5
1N4695	1N4695	8.265	8.7	9.135	50	1.0	6.6	27.4	0.4
1N4696	1N4696	8.645	9.1	9.555	50	1.0	6.9	26.2	0.08
1N4697	1N4697	9.50	10	10.5	50	1.0	7.6	24.8	0.1
1N4698	1N4698	10.45	11	11.55	50	0.05	8.4	21.6	0.11
1N4699	1N4699	11.40	12	12.6	50	0.05	9.1	20.4	0.12
1N4700	1N4700	12.35	13	13.65	50	0.05	9.8	19	0.13
1N4701	1N4701	13.30	14	14.7	50	0.05	10.6	17.5	0.14
1N4702	1N4702	14.25	15	15.75	50	0.05	11.4	16.3	0.15
1N4703	1N4703	15.20	16	16.8	50	0.05	12.1	15.4	0.16
1N4704	1N4704	16.15	17	17.85	50	0.05	12.9	14.5	0.17
1N4705	1N4705	17.10	18	18.9	50	0.05	13.6	13.2	0.18
1N4706	1N4706	18.05	19	19.95	50	0.05	14.4	12.5	0.19
1N4707	1N4707	19.00	20	21	50	0.01	15.2	11.9	0.2
1N4711	1N4711	25.65	27	28.35	50	0.01	20.4	8.8	0.27
1N4713	1N4713	28.5	30	31.5	50	0.01	22.8	7.9	0.3
1N4714	1N4714	31.35	33	34.65	50	0.01	25	7.2	0.33
1N4715	1N4715	34.2	36	37.8	50	0.01	27.3	6.6	0.36
1N4716	1N4716	37.05	39	40.95	50	0.01	29.6	6.1	0.39
1N4717	1N4717	40.85	43	45.15	50	0.01	32.6	5.5	0.43

Note:

1) Tolerance and type number designation (V_Z)
   The type numbers listed have a standard tolerance of ±5% on the nominal zener voltage. C for 2%.
2) Reverse leakage current (I_R)
   Reverse leakage currents are guaranteed and measured at V_R shown on the table.
3) Maximum zener current rating (IZM)
   Maximum zener current ratings are based on maximum zener voltage of the individual units and JEDEC 250mW rating.
4) Maximum voltage change (DV_Z)
   Voltage change is equal to the difference between V_Z at 100uA and at 10uA

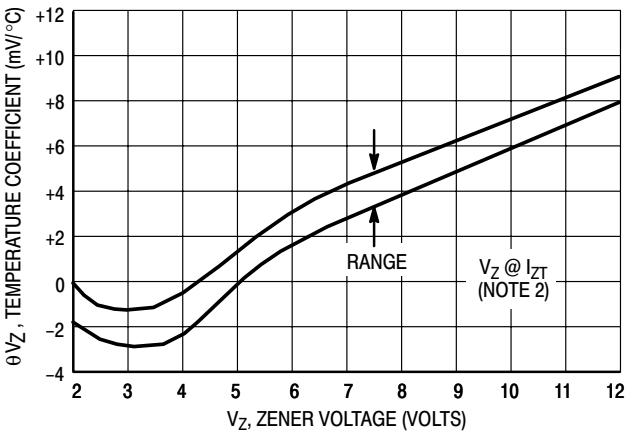


Figure 1. Range for Units to 12 Volts

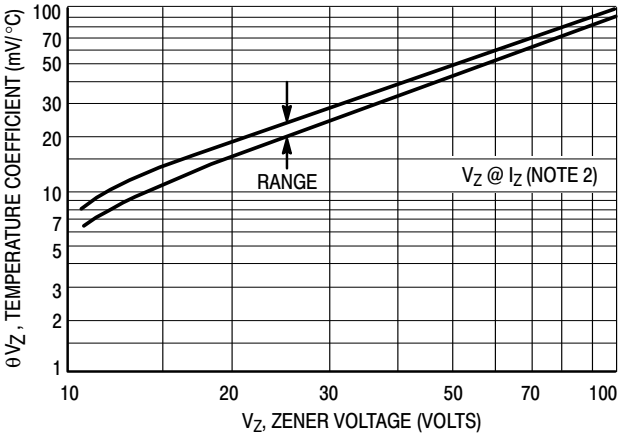


Figure 2. Range for Units 12 to 100 Volts

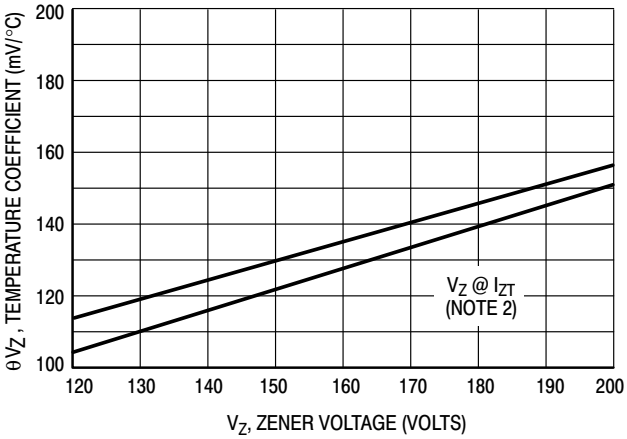


Figure 3. Range for Units 120 to 200 Volts

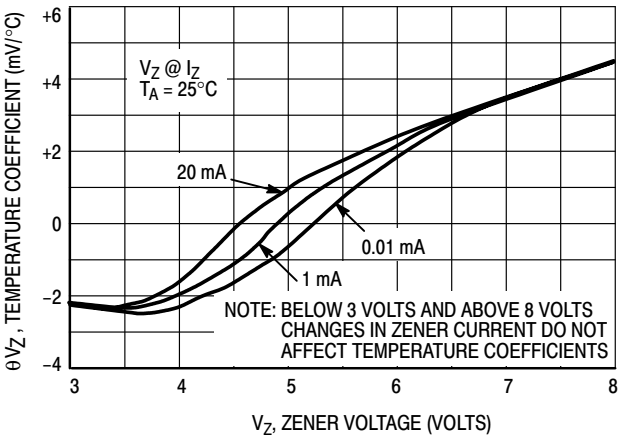


Figure 4. Effect of Zener Current

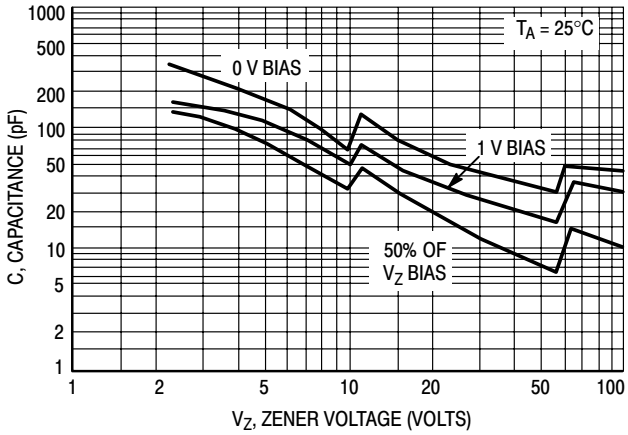


Figure 5. Typical Capacitance 2.4–100 Volts

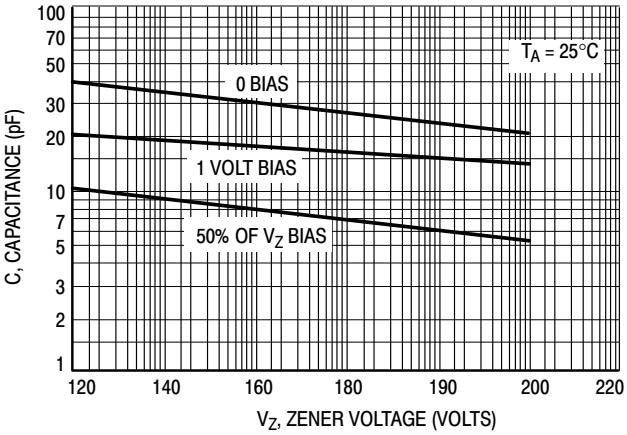


Figure 6. Typical Capacitance 120–200 Volts

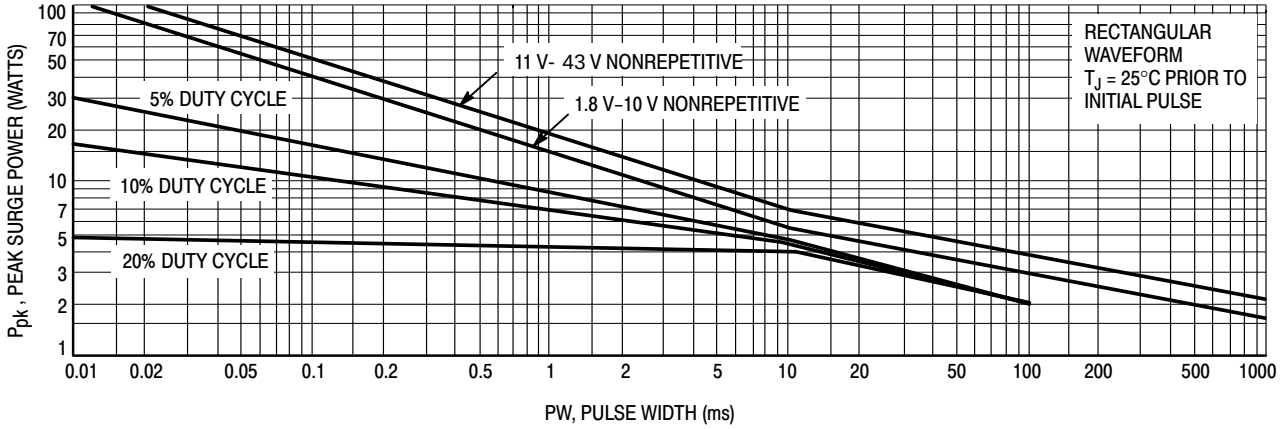


Figure 7. Maximum Surge Power 1.8–91 Volts

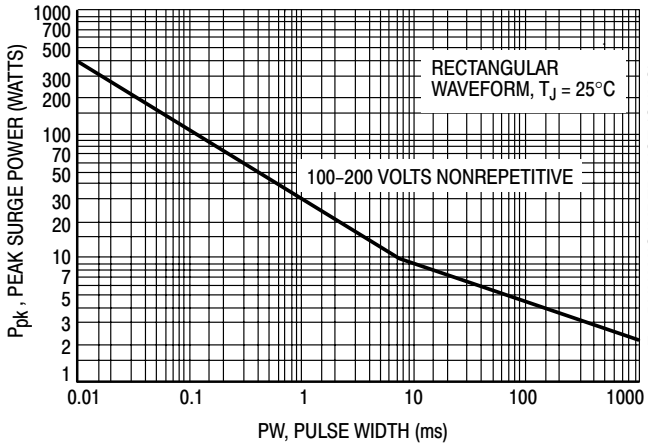


Figure 8. Maximum Surge Power DO-204AH 100–200 Volts

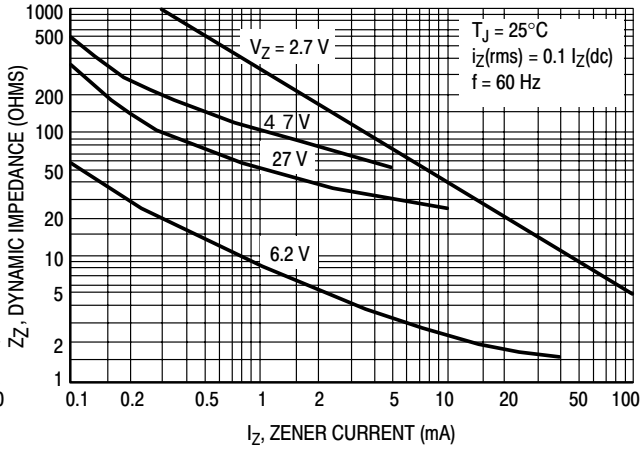


Figure 9. Effect of Zener Current on Zener Impedance

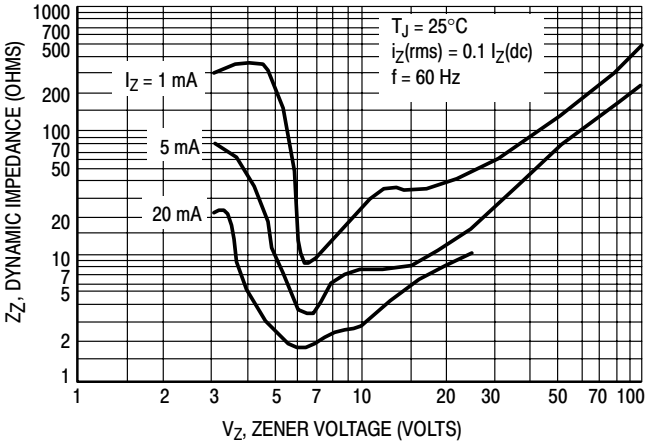


Figure 10. Effect of Zener Voltage on Zener Impedance

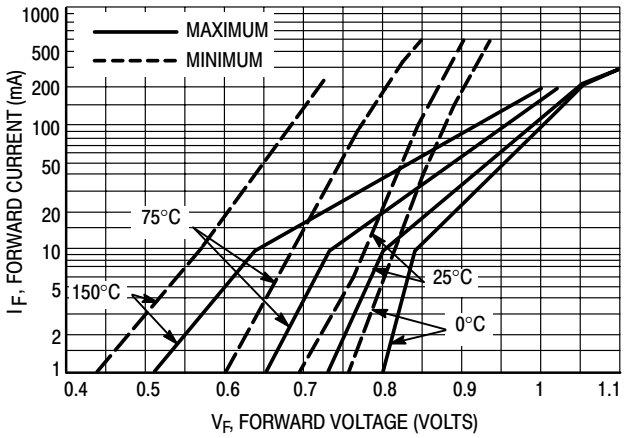


Figure 11. Typical Forward Characteristics

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Ordering Information :

Part Number-TP	Tape&Reel: 10Kpcs/Reel
Part Number-AP	Ammo Packing: 5Kpcs/Ammo Box
Part Number-BP	Bulk: 100Kpcs/Carton

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