



Micro Commercial Components



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

**1N4678
THRU
1N4717**

Features

- Zener Voltage 1.8V to 43V
- Very Sharp Reverse Characteristic
- VZ – tolerance $\pm 5\%$ 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

Maximum Ratings

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

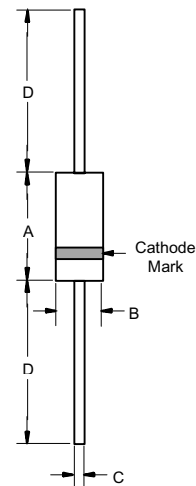
Electrical Characteristics @ 25°C Unless Otherwise Specified

	Symbol	Maximum	Unit
Max. Forward Voltage @ $I_F=100\text{mA}$	V_F	1.5	V

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

**500mW Silicon
Zener Diodes**

DO-35



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

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	uA	uA Max	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 $\pm 5\%$ 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 (I_{ZM})
Maximum zener current ratings are based on maximum zener voltage of the individual units and JEDEC 250mW rating.
- 4) Maximum voltage change (ΔV_Z)
Voltage change is equal to the difference between V_Z at 100uA and at 10uA

1N4678 thru 1N4717

M.C.C.

Micro Commercial Components

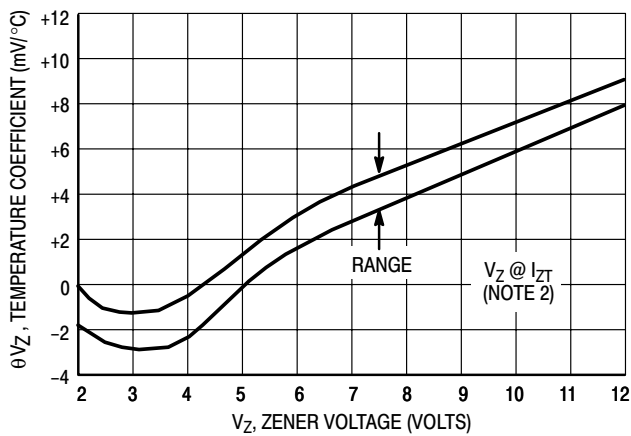


Figure 1. Range for Units to 12 Volts

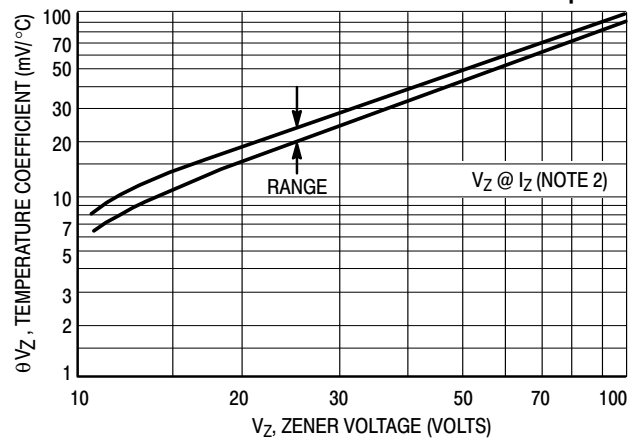


Figure 2. Range for Units 12 to 100 Volts

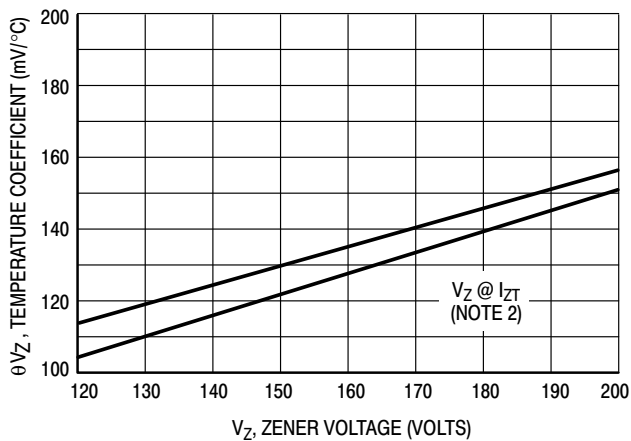


Figure 3. Range for Units 120 to 200 Volts

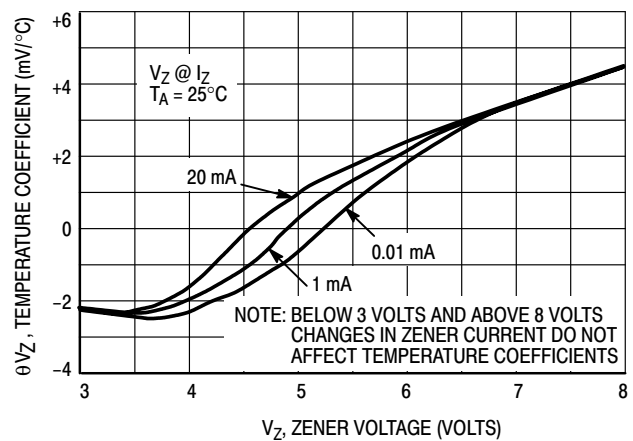


Figure 4. Effect of Zener Current

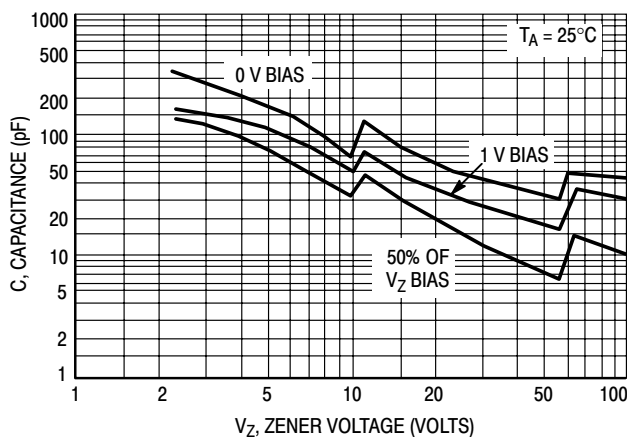


Figure 5. Typical Capacitance 2.4-100 Volts

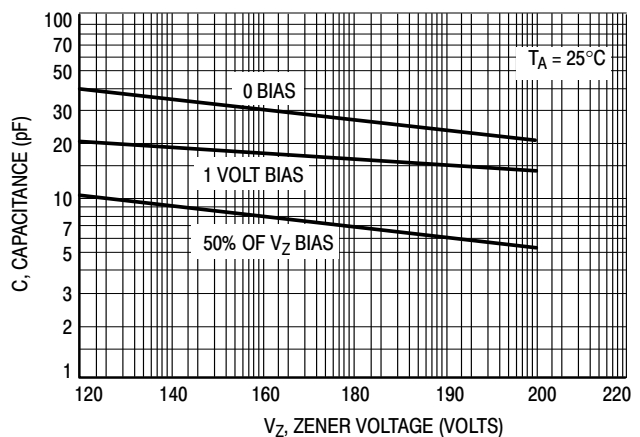


Figure 6. Typical Capacitance 120-200 Volts

www.mccsemi.com

1N4678 thru 1N4717

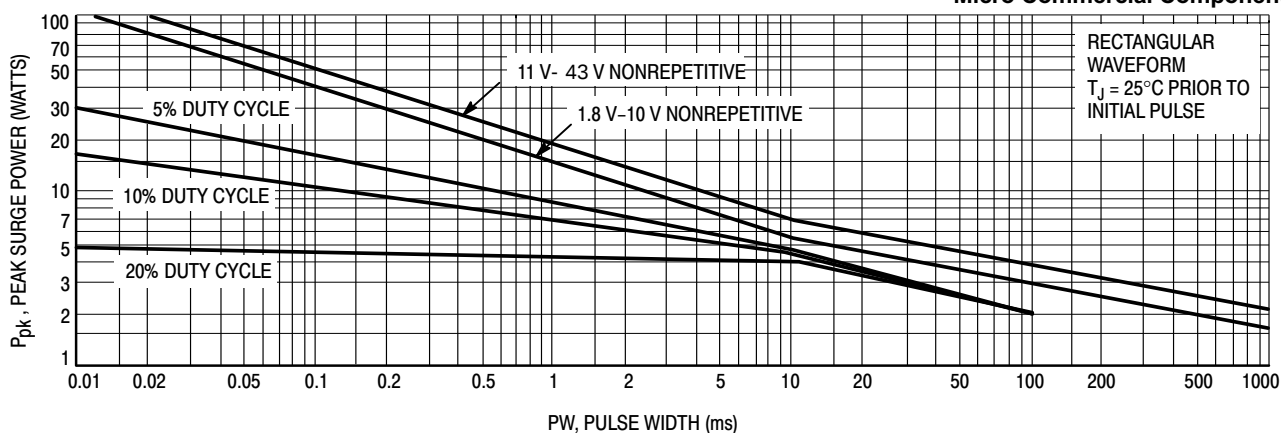


Figure 7. Maximum Surge Power 1.8-91 Volts

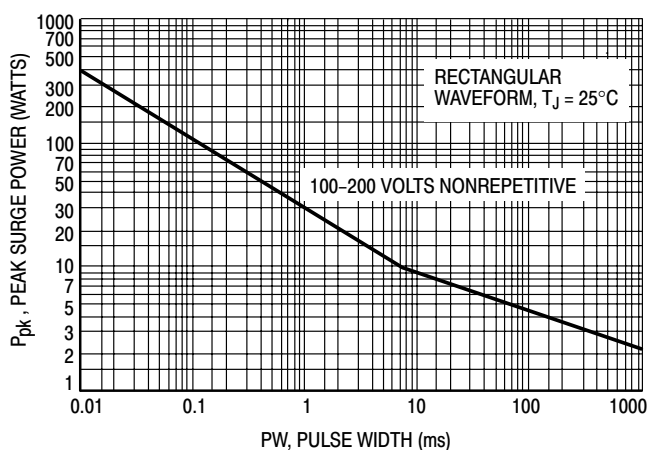


Figure 8. Maximum Surge Power DO-204AH 100-200 Volts

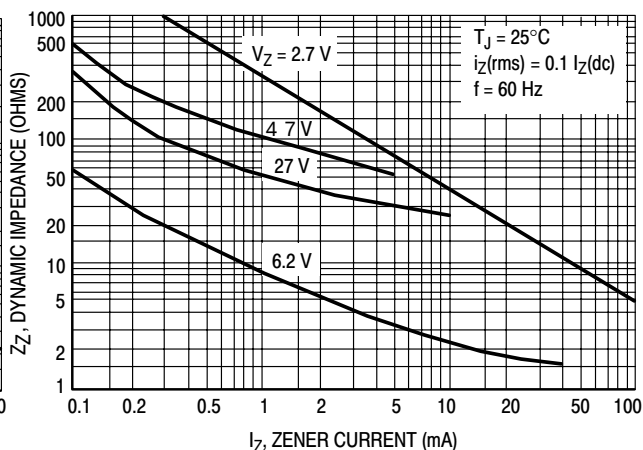


Figure 9. Effect of Zener Current on Zener Impedance

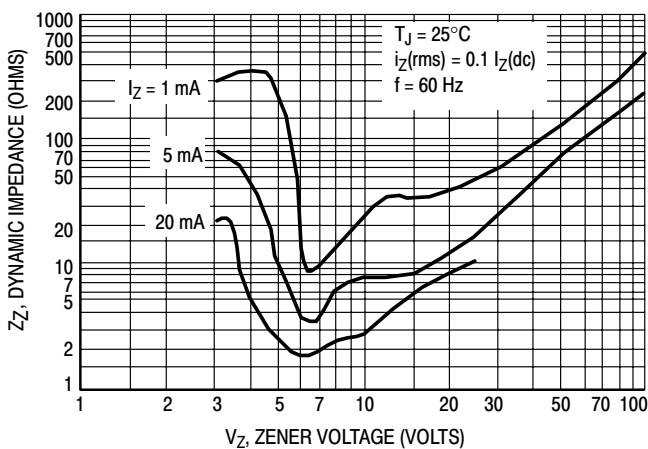


Figure 10. Effect of Zener Voltage on Zener Impedance

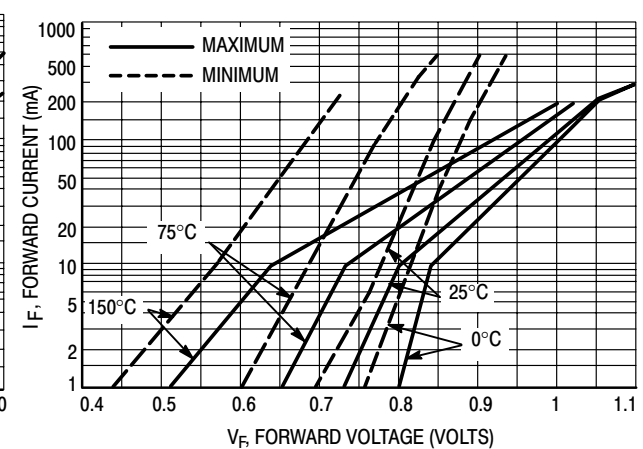


Figure 11. Typical Forward Characteristics



Micro Commercial Components

Ordering Information :

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

IMPORTANT NOTICE

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp .** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp .** and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

CUSTOMER AWARENESS

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

www.mccsemi.com