



Micro Commercial Components



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

DL4678 THRU DL4713

Features

- ## Zener Voltage 1.8V-30V
- ## Very Sharp Reverse Characteristic
- ## VZ – tolerance $\pm 5\%$
- ## High Reliability
- Surface Mount Application
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)

Mechanical Data

- ## Case: Double slug type, hermetically sealed glass
- ## Polarity: Cathode indicated by polarity band
- 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	
Storage Temperature Range	T_{STG}	-65 to 200	
Thermal Resistance(Junction to Ambient)	T_{thJA}	300	K/W

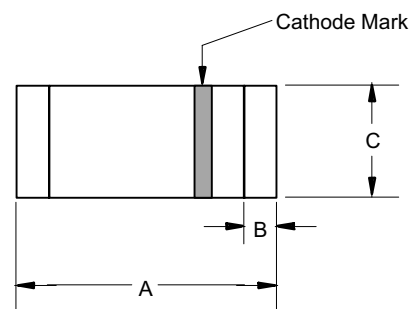
Note:1.Lead in Glass Exemption Applied, see EU Directive Annex 5.

Electrical Characteristics @ 25°C Unless Otherwise Specified

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

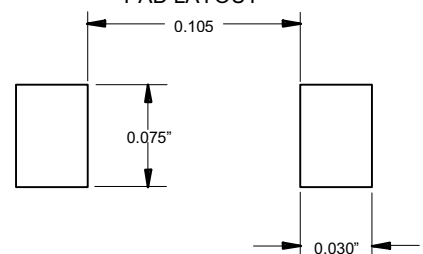
500mW Silicon Zener Diodes

MINIMELF



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.130	.146	3.30	3.70	
B	.008	.016	0.20	0.40	
C	.055	.059	1.40	1.50	

SUGGESTED SOLDER PAD LAYOUT



DL4678-DL4713

Electrical Characteristics (T_i= 30°C Unless Otherwise Noted, VF=1.5V Max @ IF=100mA for all types)

Device ⁽¹⁾	Zener Voltage ⁽²⁾				Leakage Current ⁽³⁾		I _{ZM} ⁽⁴⁾	μV _Z ⁽⁵⁾
	V _Z (Volts)			@ I _{ZT}	I _R @ V _R			
	Min	Nom	Max	uA	uA Max	Volts		
DL4678	1.71	1.8	1.89	50	7.5	1.0	120	0.7
DL4679	1.90	2.0	2.10	50	5.0	1.0	110	0.7
DL4680	2.09	2.2	2.31	50	5.0	1.0	100	0.75
DL4681	2.28	2.4	2.52	50	2.0	1.0	95	0.8
DL4682	2.565	2.7	2.835	50	1.0	1.0	90	0.85
DL4683	2.85	3.0	3.15	50	0.8	1.0	85	0.9
DL4684	3.135	3.3	3.465	50	7.5	1.5	80	0.95
DL4685	3.42	3.6	3.78	50	7.5	2.0	75	0.95
DL4686	3.705	3.9	4.095	50	5.0	2.0	70	0.97
DL4687	4.085	4.3	4.515	50	4.0	2.0	65	0.99
DL4688	4.465	4.7	4.935	50	10	3.0	60	0.99
DL4689	4.845	5.1	5.355	50	10	3.0	55	0.97
DL4690	5.32	5.6	5.88	50	10	4.0	50	0.96
DL4691	5.89	6.2	6.51	50	10	5.0	45	0.95
DL4692	6.46	6.8	7.14	50	10	5.1	35	0.9
DL4693	7.125	7.5	7.875	50	10	5.7	31.8	0.75
DL4694	7.79	8.2	8.61	50	1.0	6.2	29	0.5
DL4695	8.265	8.7	9.135	50	1.0	6.6	27.4	0.4
DL4696	8.645	9.1	9.555	50	1.0	6.9	26.2	0.08
DL4697	9.50	10	10.5	50	1.0	7.6	24.8	0.1
DL4698	10.45	11	11.55	50	0.05	8.4	21.6	0.11
DL4699	11.40	12	12.6	50	0.05	9.1	20.4	0.12
DL4700	12.35	13	13.65	50	0.05	9.8	19	0.13
DL4701	13.30	14	14.7	50	0.05	10.6	17.5	0.14
DL4702	14.25	15	15.75	50	0.05	11.4	16.3	0.15
DL4703	15.20	16	16.8	50	0.05	12.1	15.4	0.16
DL4704	16.15	17	17.85	50	0.05	12.9	14.5	0.17
DL4705	17.10	18	18.9	50	0.05	13.6	13.2	0.18
DL4707	19.00	20	21	50	0.01	15.2	11.9	0.2
DL4711	25.65	27	28.35	50	0.01	20.4	8.8	0.27
DL4713	28.5	30	31.5	50	0.01	22.8	7.9	0.3

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) Zener voltage (V_Z) measurement
The zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature (T_L) at 30°C ± 1°C and 3/8" lead length.
- 3) Reverse leakage current (I_R)
Reverse leakage currents are guaranteed and measured at V_R shown on the table.
- 4) Maximum zener current rating (I_{ZM})
Maximum zener current ratings are based on maximum zener voltage of the individual units and JEDEC 250mW rating.
- 5) Maximum voltage change (μV_Z)
Voltage change is equal to the difference between V_Z at 100uA and at 10uA

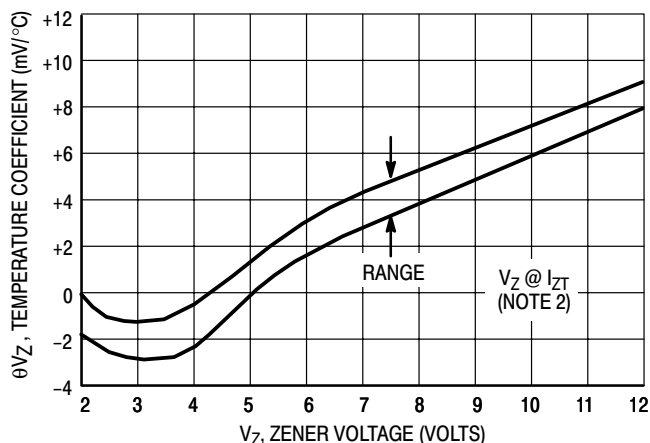


Figure 1. Range for Units to 12 Volts

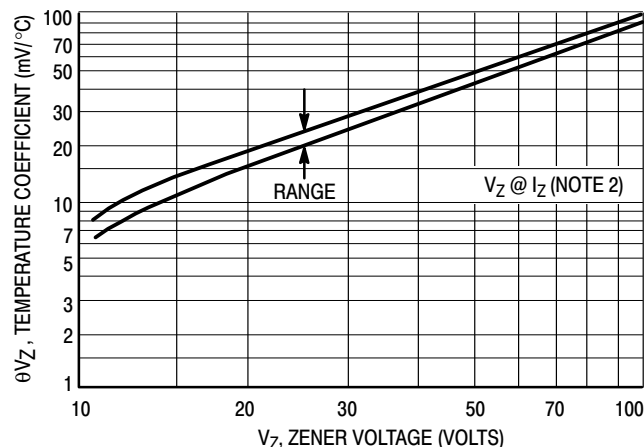


Figure 2. Range for Units 12 to 100 Volts

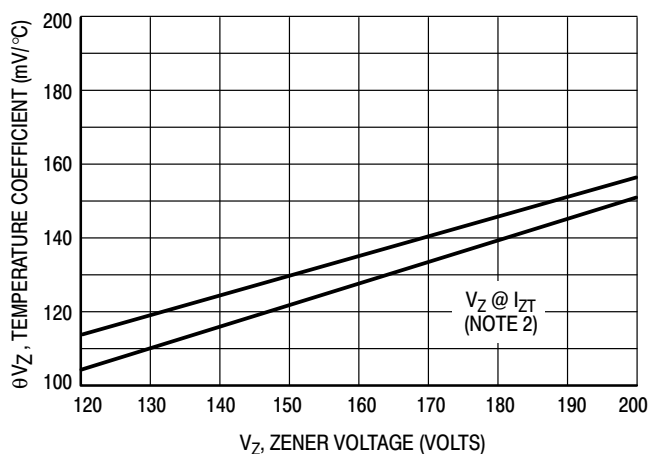


Figure 3. Range for Units 120 to 200 Volts

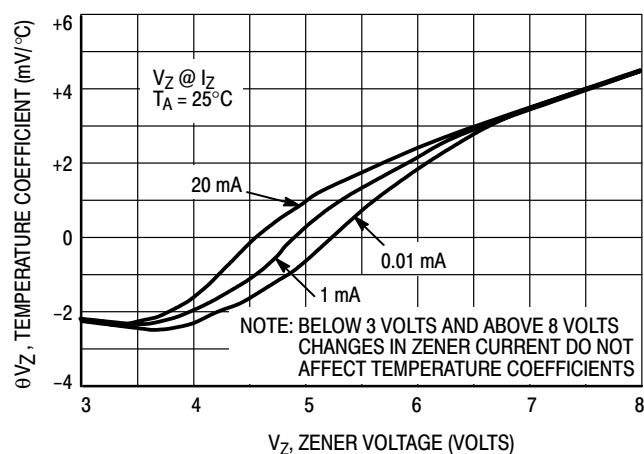


Figure 4. Effect of Zener Current

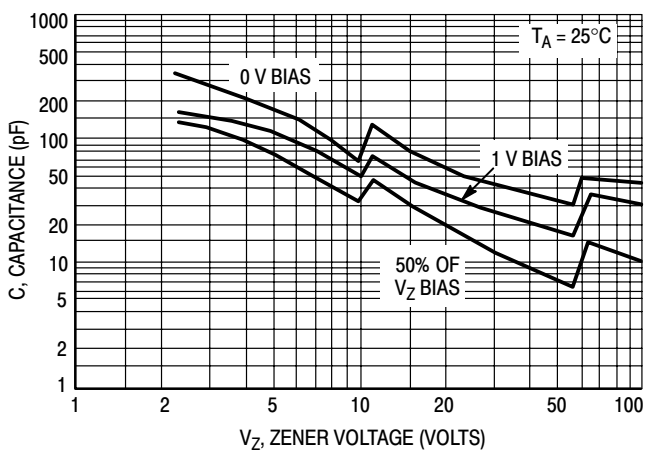


Figure 5. Typical Capacitance 2.4–100 Volts

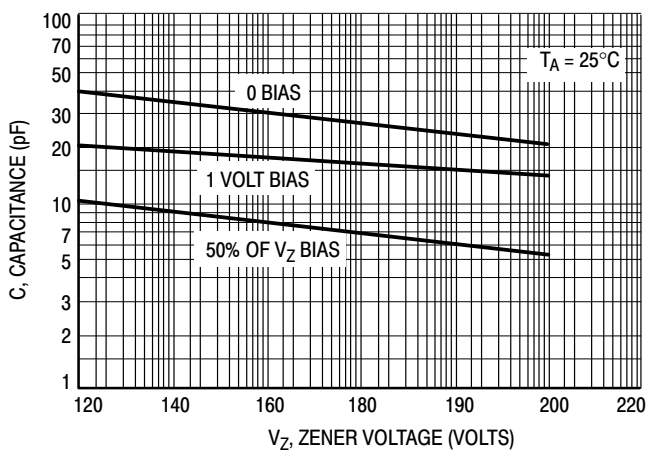


Figure 6. Typical Capacitance 120–200 Volts

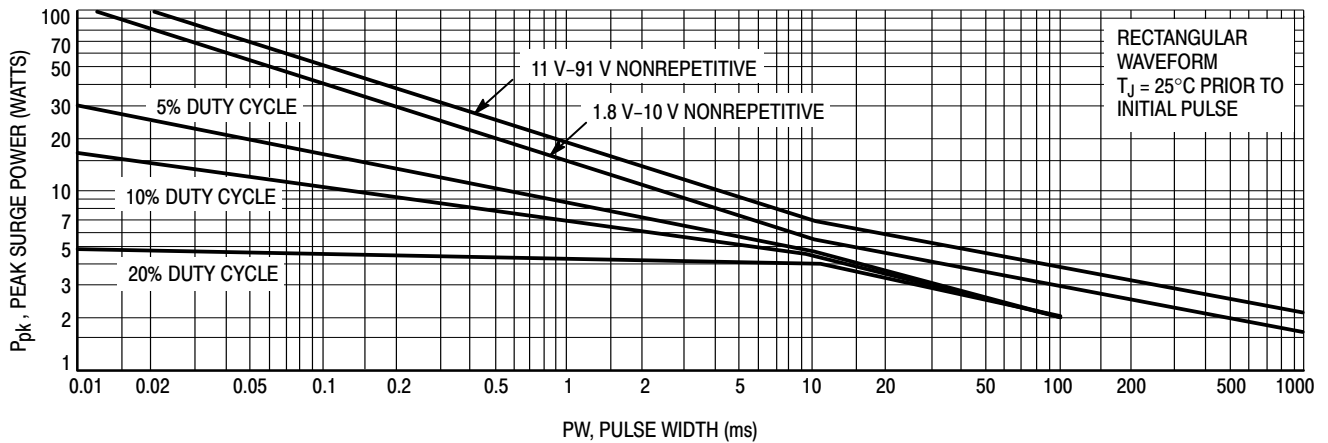


Figure 7. Maximum Surge Power 1.8-91 Volts

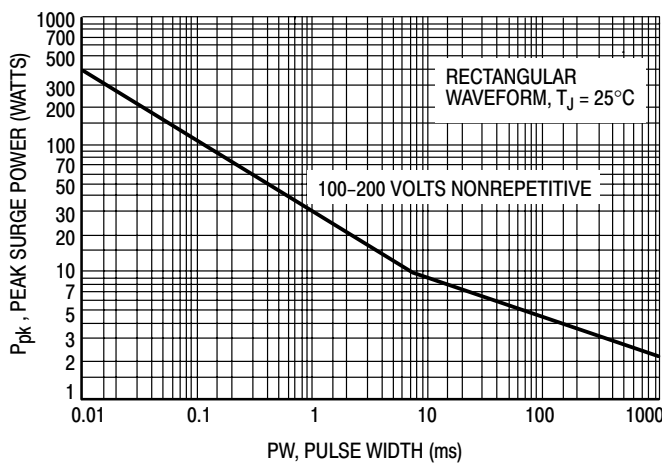
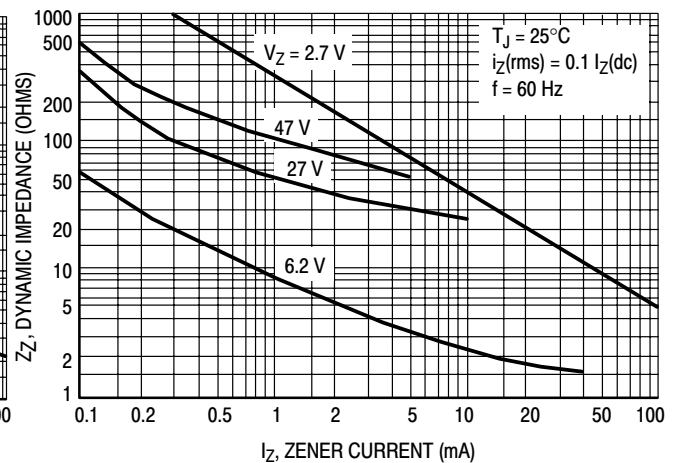
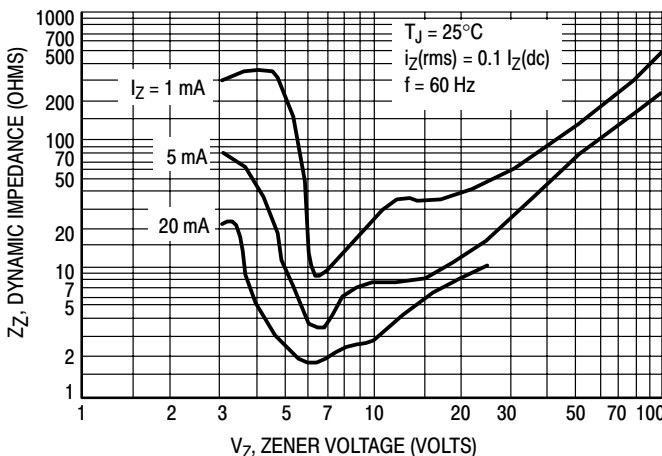
Figure 8. Maximum Surge Power DO-204AH
100-200 VoltsFigure 9. Effect of Zener Current on
Zener Impedance

Figure 10. Effect of Zener Voltage on Zener Impedance

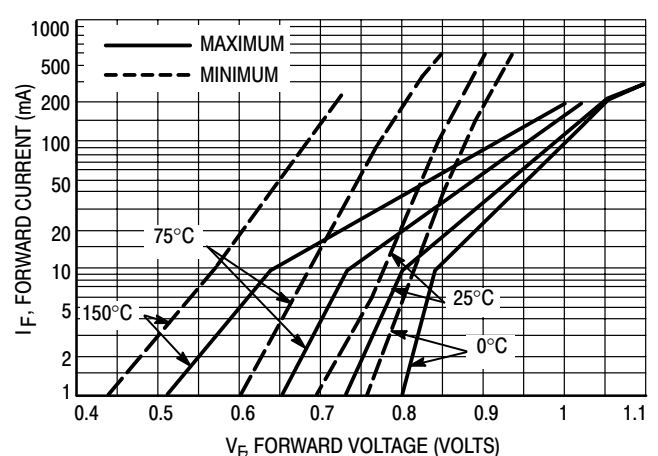


Figure 11. Typical Forward Characteristics

Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/Reel

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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Micro Commercial Components (MCC):

[DL4711-TP](#) [DL4700-TP](#) [DL4701-TP](#) [DL4683-TP](#) [DL4693-TP](#) [DL4696-TP](#) [DL4704-TP](#) [DL4687-TP](#) [DL4699-TP](#)
[DL4680-TP](#) [DL4682-TP](#) [DL4685-TP](#) [DL4695-TP](#) [DL4691-TP](#) [DL4679-TP](#) [DL4713-TP](#) [DL4684-TP](#) [DL4692-TP](#)
[DL4689-TP](#) [DL4694-TP](#) [DL4702-TP](#) [DL4707-TP](#) [DL4705-TP](#) [DL4688-TP](#) [DL4703-TP](#) [DL4698-TP](#) [DL4681-TP](#)
[DL4690-TP](#) [DL4678-TP](#) [DL4686-TP](#) [DL4697-TP](#)