Obsolete

·M·C·C·™

Micro Commercial Components

RoHS COMPLIANT

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DL4678 THRU DL4713

500mW Silicon Zener Diodes

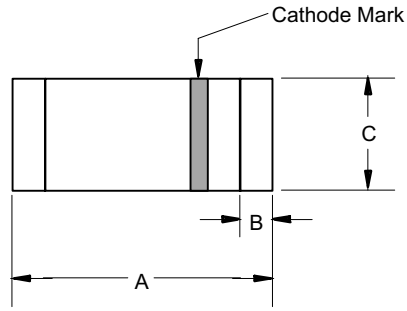
Features

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

Mechanical Data

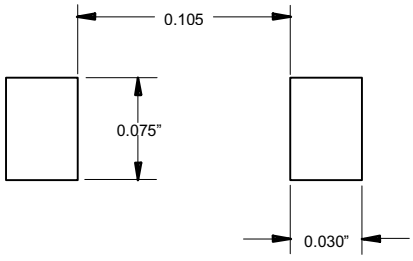
- Case: Double slug type, hermetically sealed glass
- Polarity: Cathode indicated by polarity band
- Moisture Sensitivity Level 1

MINIMELF



DIMENSION					
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



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

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=100mA	V_F	1.5	V

Electrical Characteristics (T_L= 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]	φV_Z [5]
	V_Z (Volts)			@ I_{ZT}	I_R @ V_R			
	Min	Nom	Max	µA	µA Max	Volts	mA	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 (IZM)
   Maximum zener current ratings are based on maximum zener voltage of the individual units and JEDEC 250mW rating.
5) Maximum voltage change (φV_Z)
   Voltage change is equal to the difference between V_Z at 100µA and at 10µA

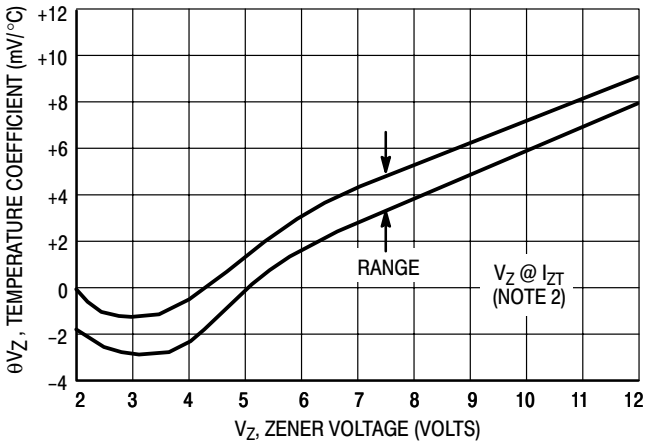


Figure 1. Range for Units to 12 Volts

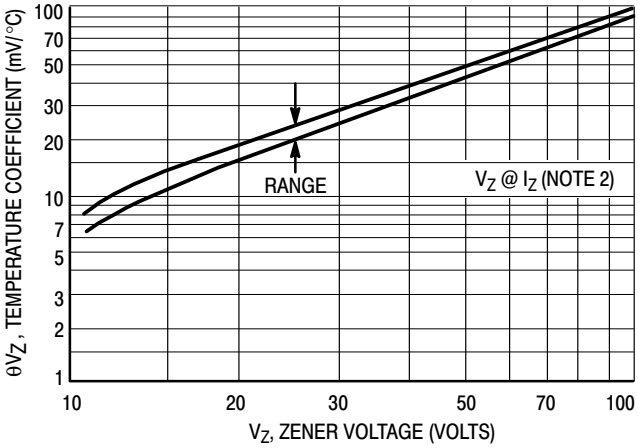


Figure 2. Range for Units 12 to 100 Volts

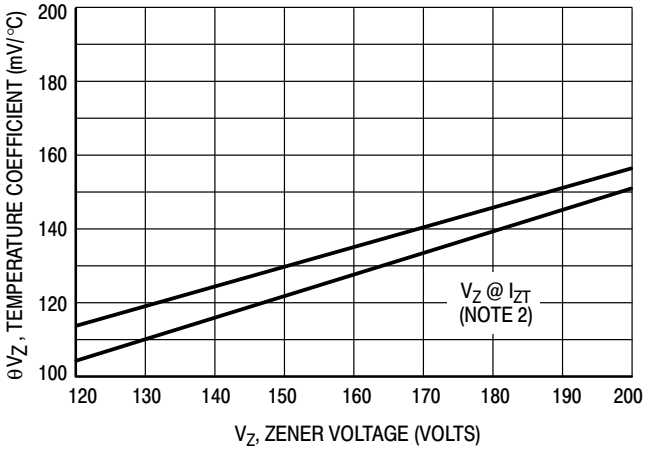


Figure 3. Range for Units 120 to 200 Volts

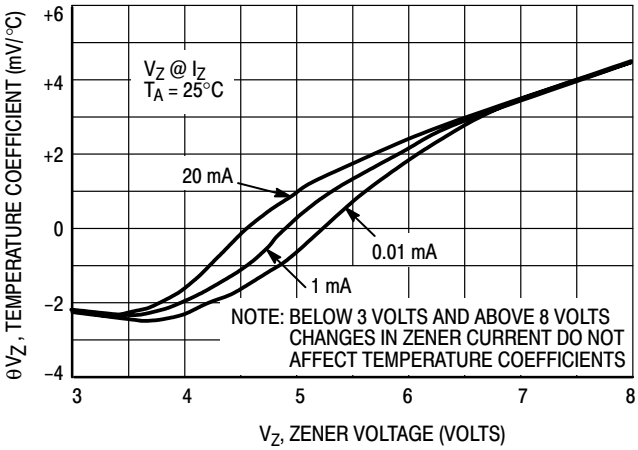


Figure 4. Effect of Zener Current

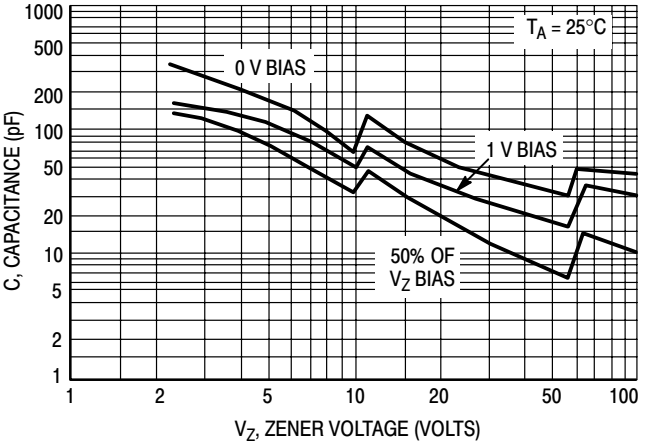


Figure 5. Typical Capacitance 2.4–100 Volts

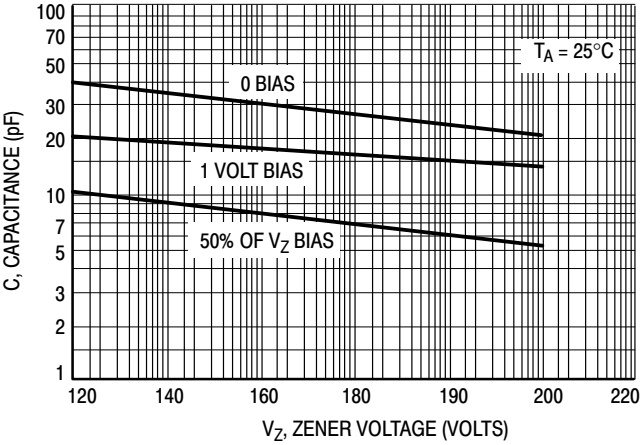


Figure 6. Typical Capacitance 120–200 Volts

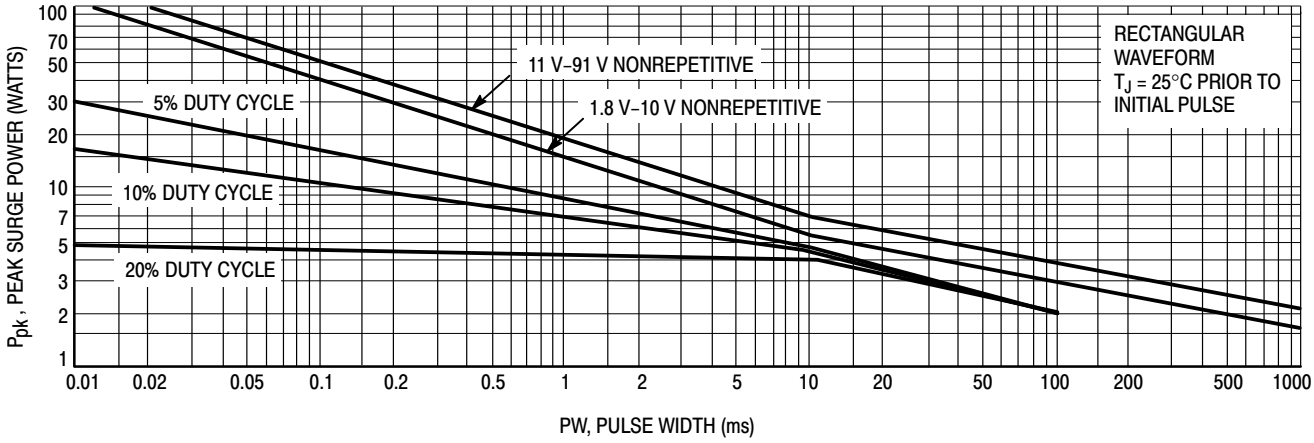


Figure 7. Maximum Surge Power 1.8–91 Volts

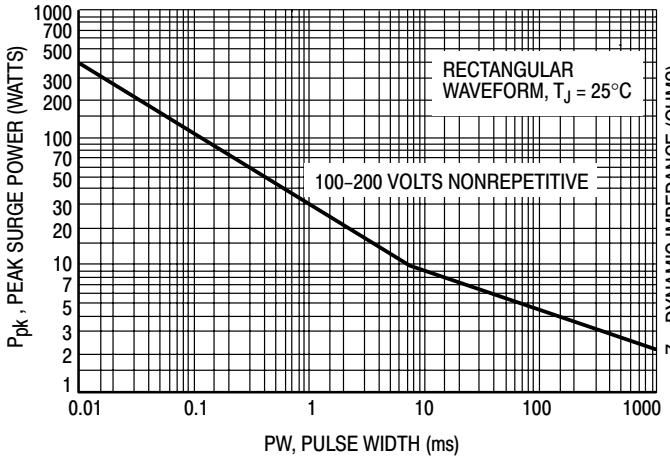


Figure 8. Maximum Surge Power DO-204AH 100–200 Volts

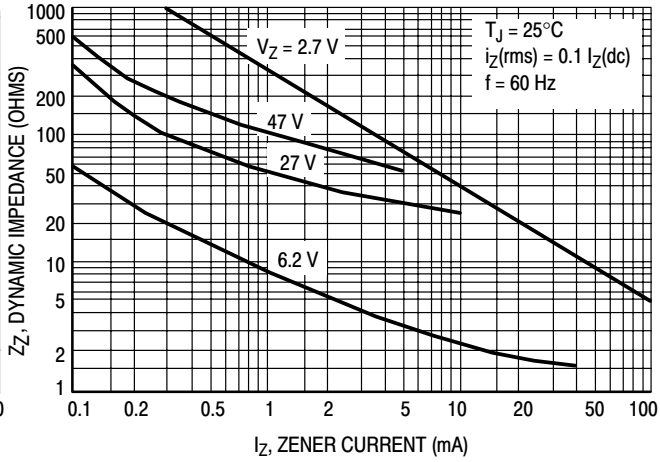


Figure 9. Effect of Zener Current on Zener Impedance

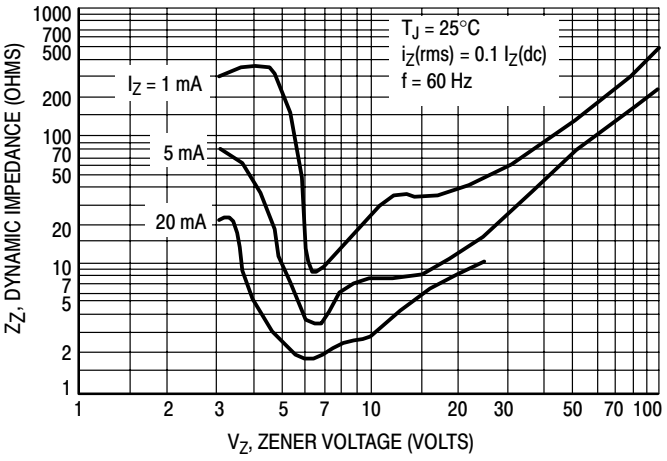


Figure 10. Effect of Zener Voltage on Zener Impedance

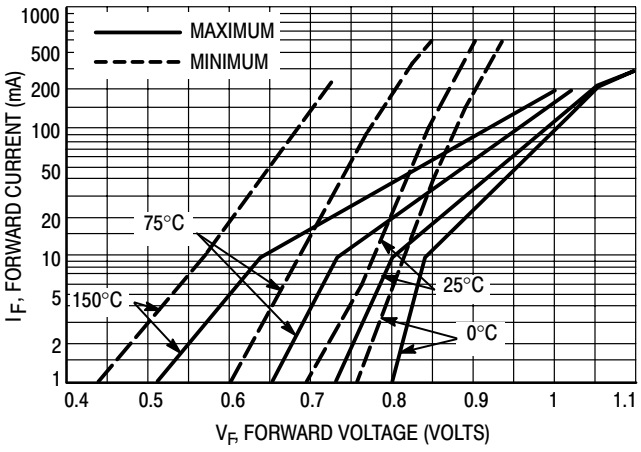


Figure 11. Typical Forward Characteristics

Ordering Information :

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

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