

# 1N4678 - 1N4717

$V_Z$  : 1.8 - 43 V  
 $P_D$  : 500 mW

### FEATURES :

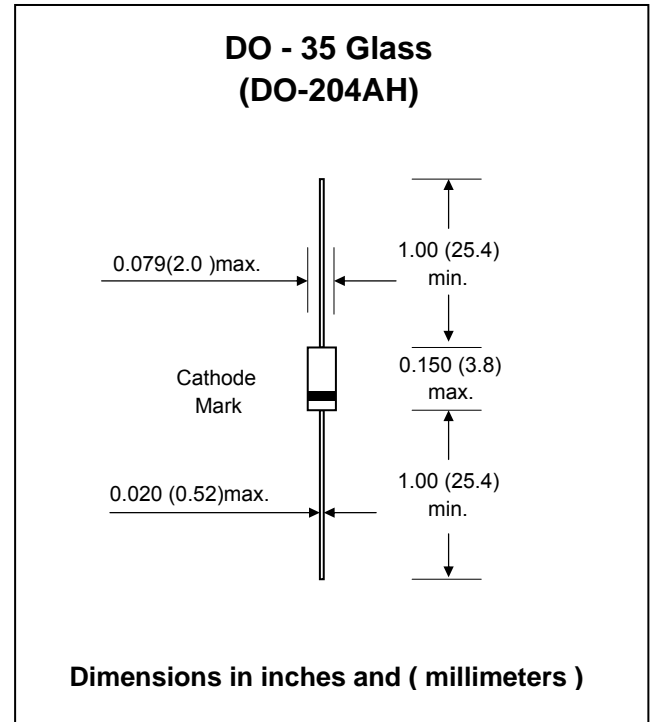
- \* Zener voltage specified at 50  $\mu$ A
- \* Maximum delta  $V_Z$  given from 10  $\mu$ A to 100  $\mu$ A
- \* Very high stability
- \* Low noise
- \* Pb / RoHS Free

### MECHANICAL DATA :

Case: DO-35 Glass Case

Weight: approx. 0.13g

## ZENER DIODES



### Maximum Ratings and Thermal Characteristics

Rating at 25 °C ambient temperature unless otherwise specific

Parameter	Symbol	Value	Unit
Power Dissipation at $T_L \leq 50$ °C (Note1)	$P_D$	500	mW
Maximum Forward Voltage at $I_F = 200$ mA	$V_F$	1.1	V
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	310	°C/W
Thermal Resistance Junction to Lead	$R_{\theta JL}$	250	°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to + 175	°C

**Note :**

(1) At 3/8" (10 mm) lead length from body, when mounted on FR4 PC board as described for thermal resistance.

## Electrical Characteristics (Rating at 25 °C ambient temperature unless otherwise specified)

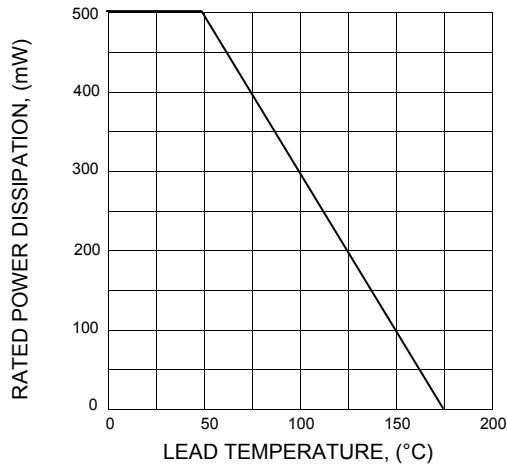
Type No. (Note 1)	Nominal Zener Voltage <sup>(3)</sup>		Zener Test Current	Max. Voltage Regulation	Max. Reverse Leakage Current		Max. Zener Current
	$V_Z @ I_{ZT}$	$I_{ZT}$	$I_{ZT}$	$\Delta V_Z^{(2,3)}$	$I_R @ V_R$	$V_R$	$I_{ZM}^{(2)}$
	(V)	$\mu A$	$\mu A$	(V)	( $\mu A$ )	(V)	(mA)
1N4678	1.8	50	50	0.70	7.5	1.0	240
1N4679	2.0	50	50	0.70	5.0	1.0	220
1N4680	2.2	50	50	0.75	4.0	1.0	200
1N4681	2.4	50	50	0.80	2.0	1.0	190
1N4682	2.7	50	50	0.85	1.0	1.0	180
1N4683	3.0	50	50	0.90	0.8	1.0	170
1N4684	3.3	50	50	0.95	7.5	1.5	160
1N4685	3.6	50	50	0.95	7.5	2.0	150
1N4686	3.9	50	50	0.97	5.0	2.0	140
1N4687	4.3	50	50	0.99	4.0	2.0	130
1N4688	4.7	50	50	0.99	10	3.0	120
1N4689	5.1	50	50	0.97	10	3.0	110
1N4690	5.6	50	50	0.96	10	4.0	100
1N4691	6.2	50	50	0.95	10	5.0	90
1N4692	6.8	50	50	0.90	10	5.1	70
1N4693	7.5	50	50	0.75	10	5.7	63.6
1N4694	8.2	50	50	0.50	1.0	6.2	58.0
1N4695	8.7	50	50	0.10	1.0	6.6	54.8
1N4696	9.1	50	50	0.08	1.0	6.9	52.4
1N4697	10	50	50	0.10	1.0	7.6	49.6
1N4698	11	50	50	0.11	0.05	8.4	43.2
1N4699	12	50	50	0.12	0.05	9.1	40.8
1N4700	13	50	50	0.13	0.05	9.8	38.0
1N4701	14	50	50	0.14	0.05	10.6	35.0
1N4702	15	50	50	0.15	0.05	11.4	32.6
1N4703	16	50	50	0.16	0.05	12.1	30.8
1N4704	17	50	50	0.17	0.05	12.9	29.0
1N4705	18	50	50	0.18	0.05	13.6	26.4
1N4706	19	50	50	0.19	0.05	14.4	25.0
1N4707	20	50	50	0.20	0.01	15.2	23.8
1N4708	22	50	50	0.22	0.01	16.7	21.6
1N4709	24	50	50	0.24	0.01	18.2	19.8
1N4710	25	50	50	0.25	0.01	19.0	19.0
1N4711	27	50	50	0.27	0.01	20.4	17.6
1N4712	28	50	50	0.28	0.01	21.2	17.0
1N4713	30	50	50	0.30	0.01	22.8	15.8
1N4714	33	50	50	0.33	0.01	25.0	14.4
1N4715	36	50	50	0.36	0.01	27.3	13.2
1N4716	39	50	50	0.39	0.01	29.6	12.2
1N4717	43	50	50	0.43	0.01	32.6	11.0

### Notes :

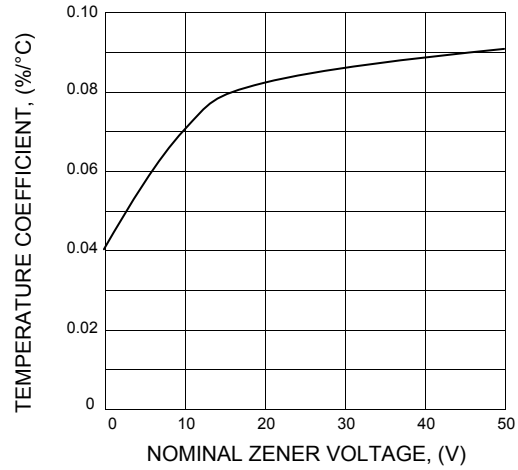
- (1) The type numbers shown have a standard tolerance of  $\pm 5\%$  on the nominal zener voltage.
- (2)  $\Delta V_Z @ 100 \mu A$  minus  $V_Z @ 10 \mu A$
- (3) The electrical characteristics are measured after allowing the device to stabilize for 20 seconds when mounted with 3/8" minimum lead length from the base.

**RATING AND CHARACTERISTIC CURVES ( 1N4678 - 1N4717 )**

**FIG.1 - POWER DERATING CURVE**



**FIG.2 - ZENER VOLTAGE TEMPERATURE COEFFICIENT VS. ZENER VOLTAGE**



**FIG.3 - CAPACITANCE VS.  $V_z$  CURVE**

