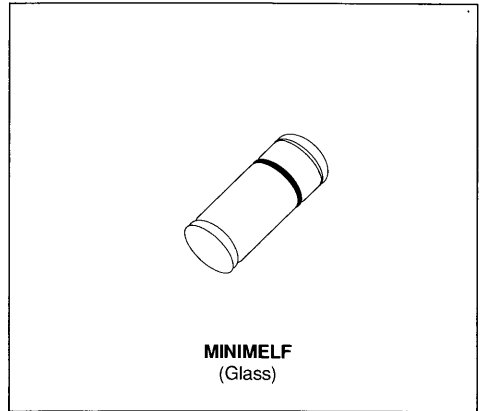




ZENER DIODES

- VOLTAGE RANGE : 1.8V TO 6.2V



DESCRIPTION

Low leakage, low impedance, low noise Zener diodes

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
P_{tot}	Power Dissipation	$T_{amb} = 25^{\circ}C$ 250	mW
I_{ZM}	Continuous Reverse Current	$T_{amb} = 25^{\circ}C$ See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range	- 65 to 200	$^{\circ}C$
T_L	Maximum Temperature for Soldering during 15s	260	$^{\circ}C$

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction-leads	250	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$)

Type	V_{ZT}/I_{ZT} (1) nom (V)	I_{ZT} (μA)	r_{ZT}/I_{ZT} (2) (Ω)	I_R / V_R (μA) / (V)	Noise Density @ 250 μA max ($\mu\text{V}/\sqrt{\text{Hz}}$)	I_{ZM} (mA)
TMM 4614	1.8	250	1200	7.5 / 1.0	1.0	120
TMM 4615	2.0	250	1250	5.0 / 1.0	1.0	110
P TMM 4616	2.2	250	1300	4.0 / 1.0	1.0	100
TMM 4617	2.4	250	1400	2.0 / 1.0	1.0	95
TMM 4618	2.7	250	1500	1.0 / 1.0	1.0	90
TMM 4619	3.0	250	1600	0.8 / 1.0	1.0	85
P TMM 4620	3.3	250	1650	7.5 / 1.5	1.0	80
P TMM 4621	3.6	250	1700	7.5 / 2.0	1.0	75
P TMM 4622	3.9	250	1650	5.0 / 2.0	1.0	70
P TMM 4623	4.3	250	1600	4.0 / 2.0	1.0	65
P TMM 4624	4.7	250	1550	10 / 3.0	1.0	60
P TMM 4625	5.1	250	1500	10 / 3.0	2.0	55
TMM 4626	5.6	250	1400	10 / 4.0	4.0	50
TMM 4627	6.2	250	1200	10 / 5.0	5.0	45

(1) Tolerance on nominal V_{ZT} value : $\pm 5\%$.

(2) Measured @ DC test current with 10% AC superimposed (50Hz).

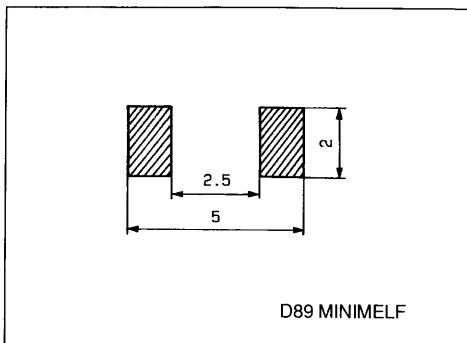
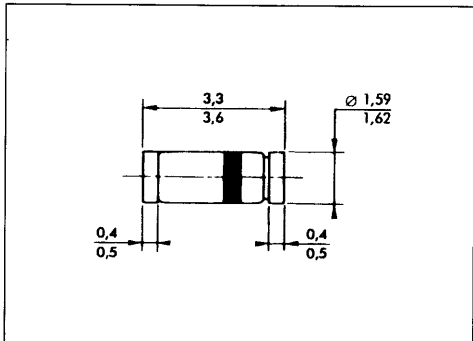
P : Preferred voltages.

Forward voltage drop : $V_F \leq 1\text{V}$ ($T_{amb} = 25^{\circ}\text{C}$, $I_F = 200\text{mA}$).

PACKAGE MECHANICAL DATA

MINIMELF Glass

FOOT PRINT DIMENSIONS (millimeters)

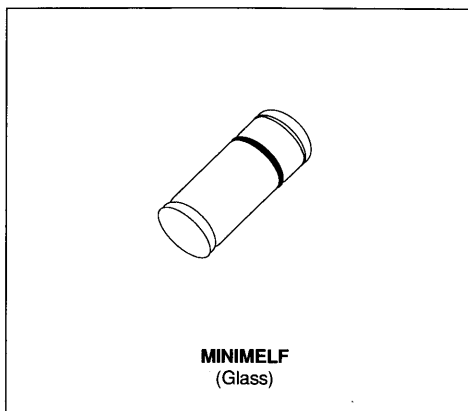


Marking : ring at cathode end.

Weight : 0.05g

ZENER DIODES

- VOLTAGE RANGE : 2.4V TO 100V



DESCRIPTION

500mW hermetically sealed glass silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
P_{tot}	Power Dissipation	$T_{lead} = 75^{\circ}C$ 0.5	mW
I_{ZM}	Continuous Reverse Current	$T_{lead} = 75^{\circ}C$ See page 2	mA
I_{ZSM}	Peak Reverse Current	$T_{amb} = 25^{\circ}C$ See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range	- 65 to 200 - 55 to 200	$^{\circ}C$
T_L	Maximum Temperature for Soldering during 15s	260	$^{\circ}C$

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction-leads	250	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V _{ZT} /I _{ZT} *	r _{ZT} /I _{ZT} *	I _{ZT} *	r _{ZK} /I _{ZK}		≈V _Z	I _R /V _R	V _R	I _{ZM}	I _{ZSM} **
	nom (V)	max (Ω)	(mA)	max (Ω)	(mA)	max (10 ⁻⁴ /°C)	max (μA)	(V)	T _{amb} 75°C (mA)	max (mA)
TMM 5221 B	2.4	30	20	1200	0.25	- 8.5	100	1.0	191	1984
TMM 5222 B	2.5	30	20	1250	0.25	- 8.5	100	1.0	182	1905
TMM 5223 B	2.7	30	20	1300	0.25	- 8.0	75	1.0	168	1764
TMM 5224 B	2.8	30	20	1400	0.25	- 8.0	75	1.0	162	1701
TMM 5225 B	3.0	29	20	1600	0.25	- 7.5	50	1.0	151	1587
P TMM 5226 B	3.3	28	20	1600	0.25	- 7.0	25	1.0	138	1443
P TMM 5227 B	3.6	24	20	1700	0.25	- 6.5	15	1.0	126	1323
P TMM 5228 B	3.9	23	20	1900	0.25	- 6.0	10	1.0	115	1221
P TMM 5229 B	4.3	22	20	2000	0.25	± 5.5	5	1.0	106	1107
P TMM 5230 B	4.7	19	20	1900	0.25	± 3.0	5	2.0	97	1013
P TMM 5231 B	5.1	17	20	1600	0.25	± 3.0	5	2.0	89	934
P TMM 5232 B	5.6	11	20	1600	0.25	+ 3.8	5	3.0	81	850
TMM 5233 B	6.0	7.0	20	1600	0.25	+ 3.8	5	3.5	76	794
P TMM 5234 B	6.2	7.0	20	1000	0.25	+ 4.5	5	4.0	73	768
P TMM 5235 B	6.8	5.0	20	750	0.25	+ 5.0	3	5.0	67	700
P TMM 5236 B	7.5	6.0	20	500	0.25	+ 5.8	3	6.0	61	635
P TMM 5237 B	8.2	8.0	20	500	0.25	+ 6.2	3	6.5	55	581
TMM 5238 B	8.7	8.0	20	600	0.25	+ 6.5	3	6.5	52	547
P TMM 5239 B	9.1	10	20	600	0.25	+ 6.8	3	7.0	50	523
P TMM 5240 B	10	17	20	600	0.25	+ 7.5	3	8.0	45	476
TMM 5241 B	11	22	20	600	0.25	+ 7.6	2	8.4	41	433
P TMM 5242 B	12	30	20	600	0.25	+ 7.7	1	9.1	38	397
TMM 5243 B	13	13	9.5	600	0.25	+ 7.9	0.5	9.9	35	397
P TMM 5244 B	14	15	9.0	600	0.25	+ 8.2	0.1	10	32	340
P TMM 5245 B	15	16	8.5	600	0.25	+ 8.2	0.1	11	30	317
TMM 5246 B	16	17	7.8	600	0.25	+ 8.3	0.1	12	28	298
TMM 5247 B	17	19	7.4	600	0.25	+ 8.4	0.1	13	27	280
TMM 5248 B	18	21	7.0	600	0.25	+ 8.5	0.1	14	25	265
TMM 5249 B	19	23	6.6	600	0.25	+ 8.6	0.1	14	24	251
TMM 5250 B	20	25	6.2	600	0.25	+ 8.6	0.1	15	23	238
TMM 5251 B	22	29	5.6	600	0.25	+ 8.7	0.1	17	21	216
TMM 5252 B	24	33	5.2	600	0.25	+ 8.8	0.1	18	19.1	198
TMM 5253 B	25	35	5.0	600	0.25	+ 8.9	0.1	19	18.2	190
TMM 5254 B	27	41	4.6	600	0.25	+ 9.0	0.1	21	16.8	176
TMM 5255 B	28	44	4.5	600	0.25	+ 9.1	0.1	21	16.2	170
TMM 5256 B	30	49	4.2	600	0.25	+ 9.1	0.1	23	15.1	159
TMM 5257 B	33	58	3.8	700	0.25	+ 9.2	0.1	25	13.8	144
TMM 5258 B	36	70	3.4	700	0.25	+ 9.3	0.1	27	12.6	132
TMM 5259 B	39	80	3.2	800	0.25	+ 9.4	0.1	30	11.5	122
TMM 5260 B	43	93	3.0	900	0.25	+ 9.5	0.1	33	10.6	111
TMM 5261 B	47	105	2.7	1000	0.25	+ 9.5	0.1	36	9.7	101
TMM 5262 B	51	125	2.5	1100	0.25	+ 9.6	0.1	39	8.9	93
TMM 5263 B	56	150	2.2	1300	0.25	+ 9.6	0.1	43	8.1	85
TMM 5264 B	60	170	2.1	1400	0.25	+ 9.7	0.1	46	7.6	79
TMM 5265 B	62	185	2.0	1400	0.25	+ 9.7	0.1	47	7.3	77
TMM 5266 B	68	230	1.8	1600	0.25	+ 9.7	0.1	52	6.7	70
TMM 5267 B	75	270	1.7	1700	0.25	+ 9.8	0.1	56	6.1	63
TMM 5268 B	82	330	1.5	2000	0.25	+ 9.8	0.1	62	5.5	58
TMM 5269 B	87	370	1.4	2200	0.25	+ 9.9	0.1	68	5.2	55
TMM 5270 B	91	400	1.4	2300	0.25	+ 9.9	0.1	69	5.0	52
TMM 5271 B	100	500	1.3	2600	0.25	+ 11.0	0.1	76	4.5	48

* Measure under thermal equilibrium and DC test conditions (T_{amb} = 25°C).

* * Rectangular waveform (t_p = 10ms).

Tolerance on nominal V_{ZT} value : ± 5%.

Voltage > 100V on request.

P : Preferred voltages.

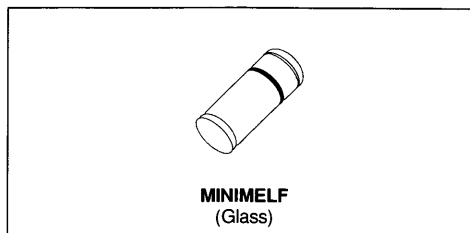
Tight tolerance on preferred voltages : ± 3% - ± 2%.

Forward voltage drop : V_F ≤ 1.1V (T_{amb} = 25°C, I_F = 200mA).

SMALL SIGNAL SCHOTTKY DIODE

DESCRIPTION

Metal to silicon junction diode featuring high break-down, low turn-on voltage and ultrafast switching. Primarily intended for high level UHF/VHF detection and pulse application with broad dynamic range. Matched batches are available on request.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	70	V
I_F	Forward Continuous Current	$T_I = 25^\circ\text{C}$ 15	mA
P_{tot}	Power Dissipation	$T_I = 25^\circ\text{C}$ 430	mW
T_{stg} T_j	Storage and Junction Temperature Range	- 65 to 200	$^\circ\text{C}$
T_L	Maximum Temperature for Soldering during 15s	260	$^\circ\text{C}$

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th(j-l)}$	Junction-leads	400	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_{amb} = 25^\circ\text{C}$ $I_R = 10\mu\text{A}$	70			V
V_F^*	$T_{amb} = 25^\circ\text{C}$ $I_F = 1\text{mA}$			0.41	V
	$T_{amb} = 25^\circ\text{C}$ $I_F = 15\text{mA}$			1	
I_R^*	$T_{amb} = 25^\circ\text{C}$ $V_R = 50\text{V}$			0.2	μA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
C	$T_{amb} = 25^\circ\text{C}$ $V_R = 0\text{V}$ $f = 1\text{MHz}$			2	pF
τ	$T_{amb} = 25^\circ\text{C}$ $I_F = 5\text{mA}$ Krakauer Method			100	ps

* Pulse test : $t_p \leq 300\mu\text{s}$ $\delta < 2\%$.

Matched batches available on request. Test conditions (forward voltage and/or capacitance) according to customer specification.

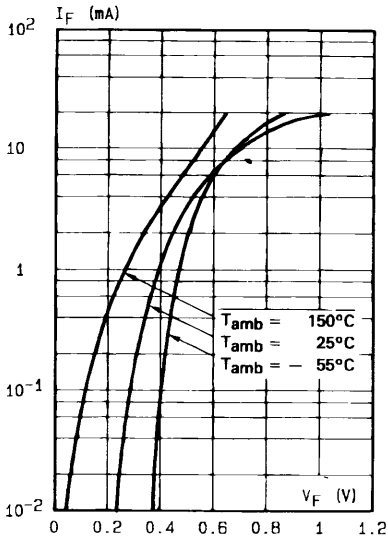


Fig.1 Forward current versus forward voltage at low level (typical values).

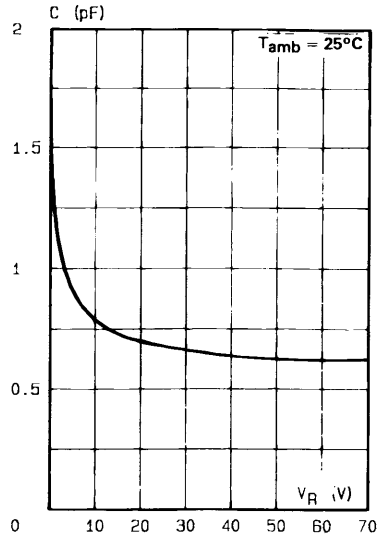


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

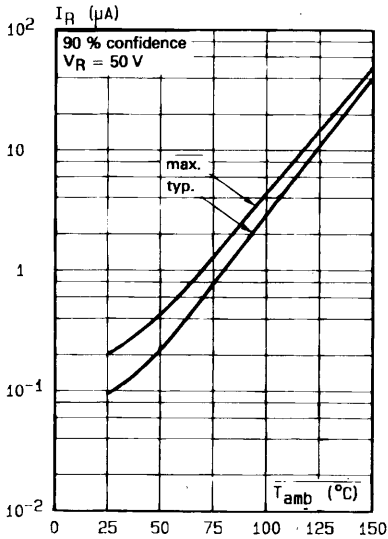


Fig.3 - Reverse current versus ambient temperature.

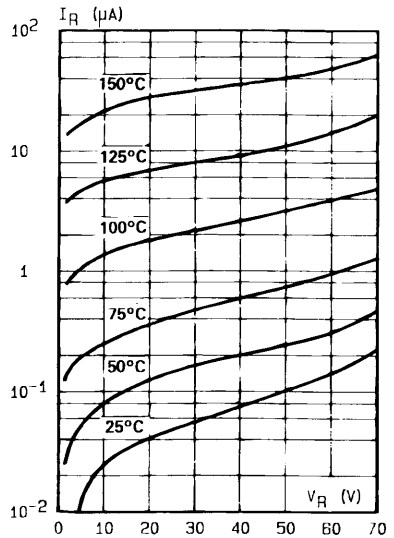
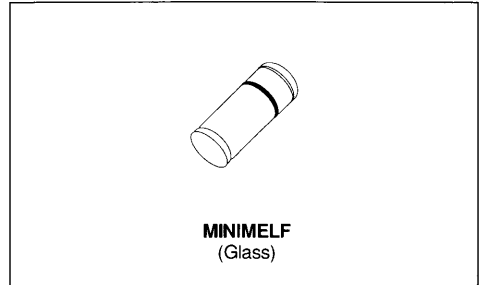


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

SMALL SIGNAL SCHOTTKY DIODE

DESCRIPTION

Metal to silicon junction diode featuring high breakdown voltage, low turn-on voltage and ultrafast switching.

Primarily intended for high level UHF/VHF detection and pulse application with broad dynamic range.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	20	V
I_F	Forward Continuous Current	$T_I = 25^\circ\text{C}$ 35	mA
P_{tot}	Power Dissipation	$T_I = 25^\circ\text{C}$ 430	mW
T_{stg} T_J	Storage and Junction Temperature Range	- 65 to 200	$^\circ\text{C}$
T_L	Maximum Temperature for Soldering during 15s	260	$^\circ\text{C}$

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction-leads	400	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS
STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_{amb} = 25^\circ\text{C}$	$I_R = 10\mu\text{A}$	20			V
V_F^*	$T_{amb} = 25^\circ\text{C}$	$I_F = 1\text{mA}$			0.41	V
	$T_{amb} = 25^\circ\text{C}$	$I_F = 35\text{mA}$			1	
I_R^*	$T_{amb} = 25^\circ\text{C}$	$V_R = 15\text{V}$			0.1	μA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_{amb} = 25^\circ\text{C}$	$V_R = 0\text{V}$	$f = 1\text{MHz}$			1.2	pF
τ	$T_{amb} = 25^\circ\text{C}$	$I_F = 5\text{mA}$	Krakauer Method			100	ps

* Pulse test : $t_p \leq 300\mu\text{s}$ $\delta < 2\%$.

Matched batches available on request. Test conditions (forward voltage and/or capacitance) according to customer specification.

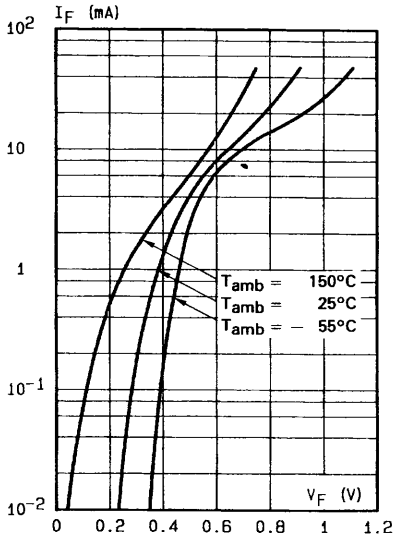


Fig.1 - Forward current versus forward voltage at different temperatures (typical values)

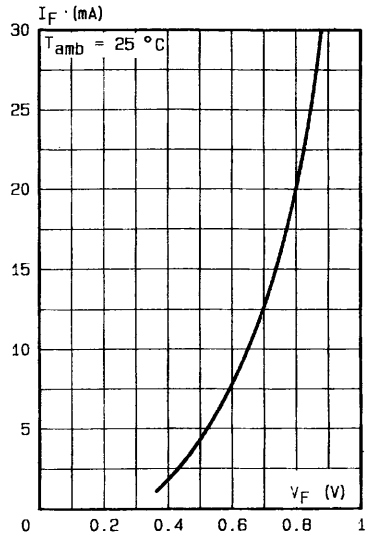


Fig.2 - Forward current versus forward voltage (typical values)

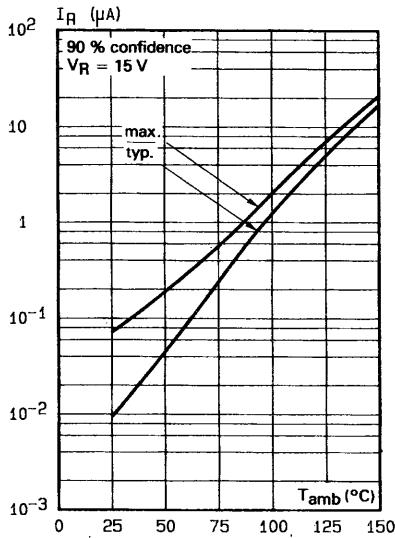


Fig.3 - Reverse current versus ambient temperature.

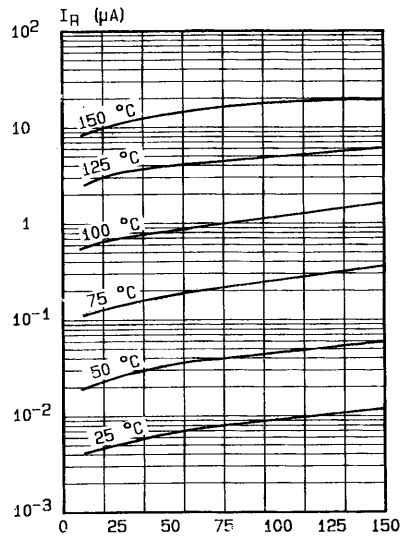


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

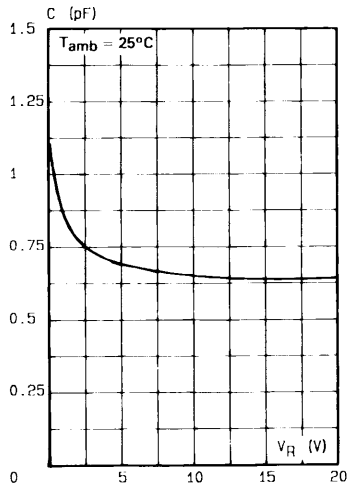
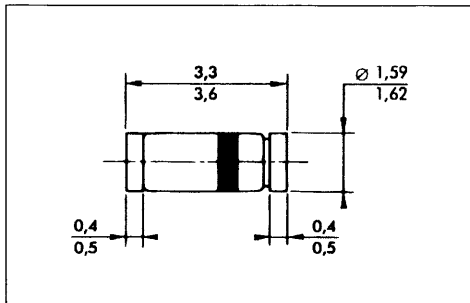


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

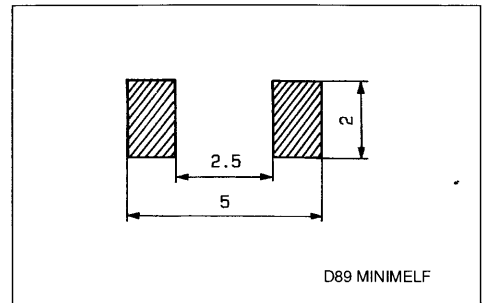
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking : ring at cathode end.
Weight : 0.05g

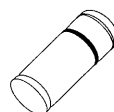
FOOT PRINT DIMENSIONS (millimeter)



SMALL SIGNAL SCHOTTKY DIODE
DESCRIPTION

Metal to silicon junction diode featuring high break-down, low turn-on voltage and ultrafast switching.

Primarily intended for high level UHF/VHF detection and pulse application with broad dynamic range.



MINIMELF
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	60	V
I_F	Forward Continuous Current	$T_I = 25^\circ\text{C}$ 15	mA
I_{FSM}	Surge non Repetitive Forward Current	$t_p \leq 1\text{s}$ 50	mA
T_{stg} T_j	Storage and Junction Temperature Range	- 65 to 200	$^\circ\text{C}$
T_L	Maximum Temperature for Soldering during 15s	260	$^\circ\text{C}$

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction-leads	400	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS
STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_{amb} = 25^\circ\text{C}$	$I_R = 10\mu\text{A}$	60			V
V_F^*	$T_{amb} = 25^\circ\text{C}$	$I_F = 1\text{mA}$			0.41	V
	$T_{amb} = 25^\circ\text{C}$	$I_F = 15\text{mA}$			1	
I_R^*	$T_{amb} = 25^\circ\text{C}$	$V_R = 50\text{V}$			0.2	μA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_{amb} = 25^\circ\text{C}$	$V_R = 0\text{V}$	$f = 1\text{MHz}$			2.2	pF
τ	$T_{amb} = 25^\circ\text{C}$	$I_F = 5\text{mA}$	Krakauer Method			100	ps

* Pulse test : $t_p \leq 300\mu\text{s}$ $\delta < 2\%$.

Matched batches available on request. Test conditions (forward voltage and/or capacitance) according to customer specification.

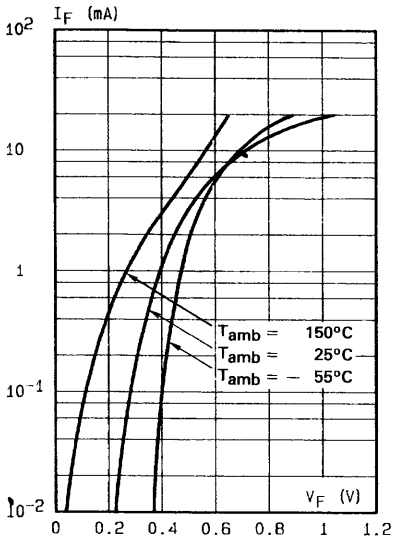


Fig.1 - Forward current versus forward voltage (typical values).

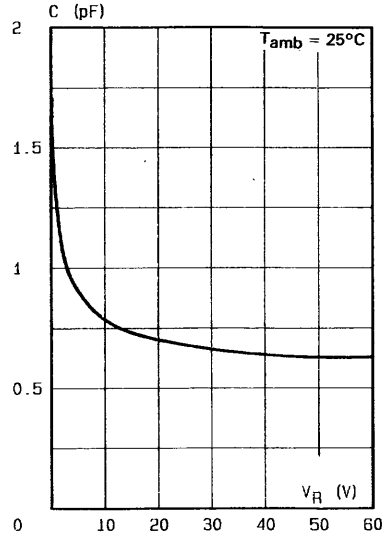


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

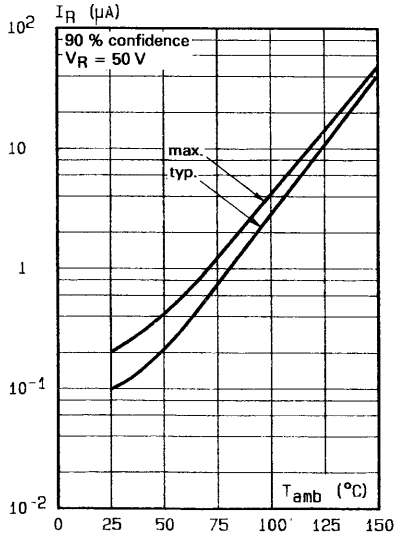


Fig.3 - Reverse current versus ambient temperature.

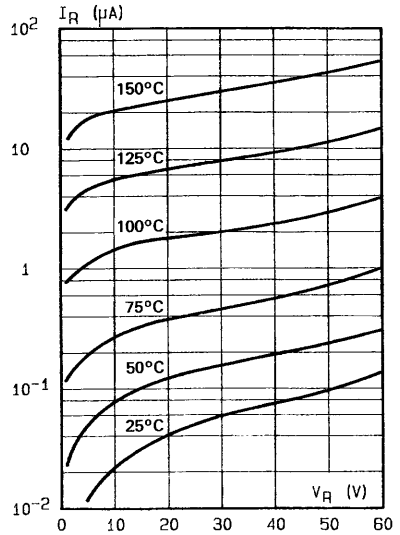


Fig.4 - Reverse current versus continuous reverse voltage (typical values).