

TYPE 1N643 SILICON SWITCHING DIODE

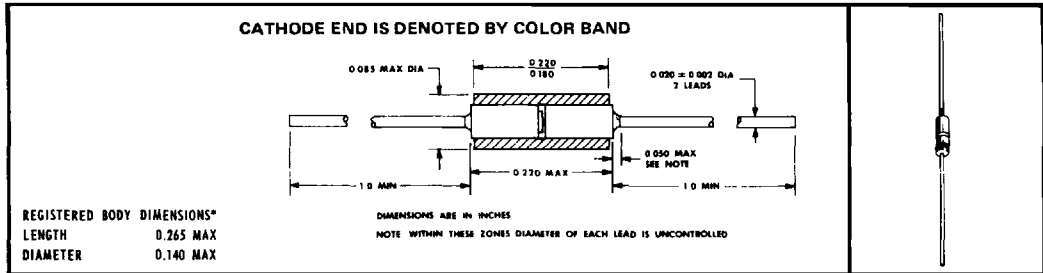
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MEDIUM-SPEED SWITCHING DIODE

- Rugged Double-Plug Construction

mechanical data

Double-plug construction affords integral positive contact by means of a thermal compression bond. Moisture-free stability is ensured through hermetic sealing. The coefficients of thermal expansion of the glass case and the dumet plugs are closely matched to allow extreme temperature excursions. Hot-solder-dipped leads are standard.



absolute maximum ratings at 25°C free-air temperature (unless otherwise noted)

* $V_{RM(wtg)}$	Working Peak Reverse Voltage	175 V
* I_O	Average Rectified Forward Current at (or below) 25°C Free-Air Temperature (See Note 1)	40 mA
* $I_{FM(surge)}$	Peak Surge Current, One Second (See Note 2)	0.5 A
* $I_{FM(surge)}$	Peak Surge Current, 0.3 Second (See Note 2)	1 A
* $I_{FM(pulse)}$	Peak Pulse Current (See Note 3)	2 A
P	Continuous Power Dissipation at (or below) 25°C Free-Air Temperature (See Note 4)	250 mW
* $T_{A(opr)}$	Operating Free-Air Temperature Range	-65°C to 150°C
* T_{stg}	Storage Temperature Range	-65°C to 150°C

electrical characteristics at 25°C free-air temperature (unless otherwise noted)

PARAMETER	TEST CONDITIONS	MIN	MAX	UNIT
$V_{(BR)}$ Reverse Breakdown Voltage	$I_R = 100 \mu A$	200		V
* I_R Static Reverse Current	$V_R = 10 V$		0.025	μA
	$V_R = 100 V$		1	μA
	$V_R = 10 V, T_A = 100^\circ C$		5	μA
	$V_R = 100 V, T_A = 100^\circ C$		15	μA
* V_F Static Forward Voltage	$I_F = 10 mA$		1	V

*switching characteristics at 25°C free-air temperature

PARAMETER	TEST CONDITIONS	MIN	MAX	UNIT
t_{rr} Reverse Recovery Time	256-JAN, $I_F = 5 mA, V_R = 40 V, R_L = 2.3 k\Omega, C_L = 40 pF, Recovery to 200 k\Omega, See Note 5$		0.3	μs

- NOTES: 1. These values may be applied continuously under single-phase 60-Hz half-sine-wave operation with resistive load. Derate linearly to 0 at 150°C free-air temperature.
 2. These values apply for the specified square-wave pulse with the device at nonoperating thermal equilibrium immediately prior to the surge.
 3. This value applies for $t_p \leq 1 \mu s$, duty cycle $\leq 1\%$.
 4. Derate linearly to 150°C free-air temperature at the rate of 2 mW/°C.
 5. Reverse recovery time is measured using a forward current pulse of 1- μs duration, PRR ≤ 100 kHz. The waveform is monitored on an oscilloscope with a bandwidth of 30 MHz minimum.

*Indicates JEDEC registered data