General Purpose Axial Lead Glass Packaged Schottky Diodes

V3.00

Features

- Picosecond Switching
- JANTX/JANTXV Screening Available
- Low Forward Voltage Drop
- Low Reverse Leakage

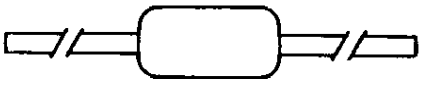
Description

This family of Schottky diodes have "picosecond" switching speed. These diodes are housed in a hermetic axial lead glass package and can be screened to JANTX and JANTXV levels. Breakdown voltage of up to 70 volts is available. The MA4E2835 is designed to have very low forward drop.

Applications

This family of axial lead glass packaged Schottky diodes is useful for high level mixers, detectors, upconverters and fast switching and gating circuits. These diodes are also used in fast sampling circuits such as bridge quads and/or limiters, for pulse shaping circuits and for gates in frequency discriminators.

Case Style 54



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Electrical Specifications at 25°C
General Purpose Diodes

These silicon diodes are packaged in an axial lead glass package. Various uses include detecting, mixing and switching at low power levels. This series of diodes can also be used in the UHF and VHF frequency bands for pulse shaping, sampling and as fast logic gates.

Model[1,2] Number	JEDEC Equivalent Part Number	Minimum[3] Reverse Voltage V_R (Volts)	Maximum Forward Voltage V_F @ 1 mA (Volts)	Minimum Forward Current V_F @ 1 V (mA)	Maximum Reverse Leakage Current, I_R (nA)	Maximum[4] Total Capacitance, C_T (pF)
1N5711	1N5711	70	0.410	75	200 @ -50V	1.0
MA4E2303	1N5167	20	0.400	35	500 @ -15V	1.0
MA4E2810	—	20	0.410	35	100 @ -15V	1.2
MA4E2812	1N5712	20	0.550	35	150 @ -15V	1.2
MA4E2811	1N5713	15	0.410	20	100 @ -8V	1.2
MA4E2835	—	8[5]	0.340	10	100 @ -1V	1.0

Notes:
1. Effective minority carrier lifetime (TL) is 100 ps maximum measured with the Krakauer method at 20 mA, for all diodes except MA4E2835, MA4E2812 and MA4E2811 which are measured at 5 mA.
2. All diodes in this series are housed in case style 54, a miniature axial lead glass package.
3. Reverse voltage is measured at 10 µA current, except where noted.
4. Capacitance is measured at 0 V and 1 MHz.
5. JANTX and JANTXV level screening are available upon request. Contact factory.
6. The reverse voltage of MA4E2835 is measured at 100 µA reverse current.

Absolute Maximum Ratings at 25°C

Parameter	Absolute Maximum
Storage Temperature	-65°C to +200°C
Operating Temperature	-65°C to +150°C
Reverse Voltage	See voltage ratings
Power Dissipation	250 mW Derate linearly to zero at 135°C
Soldering Temperature	230°C for 5 seconds 1 mm from glass

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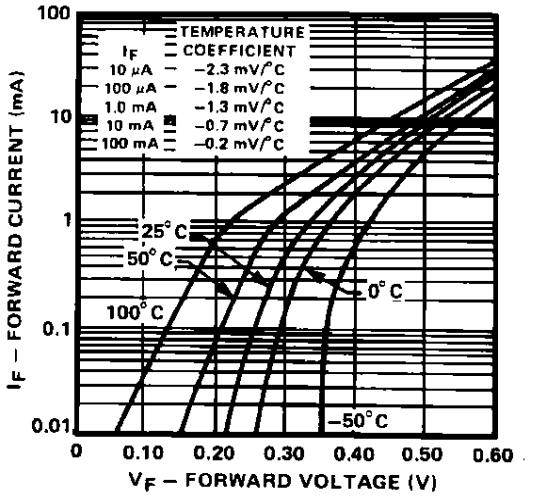
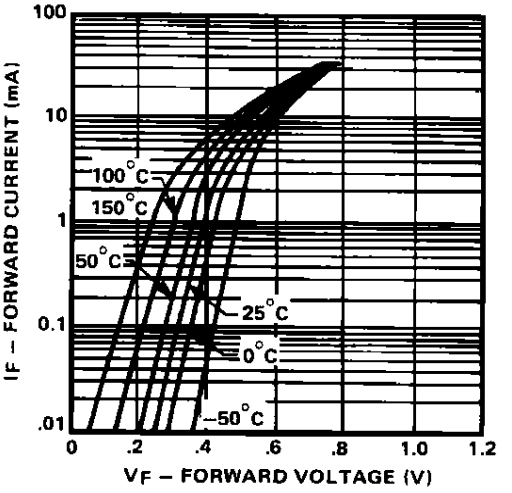
Typical Performance Curves

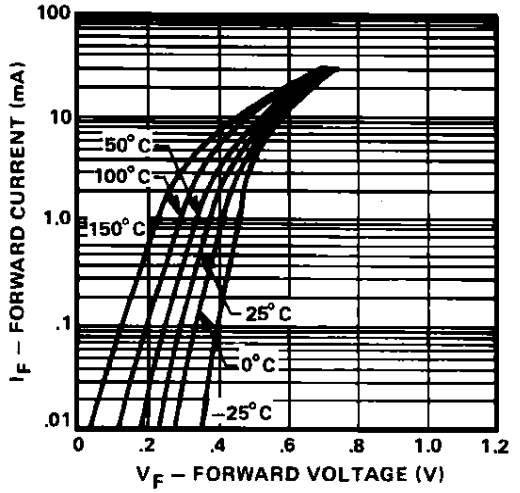
I-V CURVE SHOWING TYPICAL TEMPERATURE VARIATIONS FOR THE MA4E2303 SERIES SCHOTTKY DIODES.



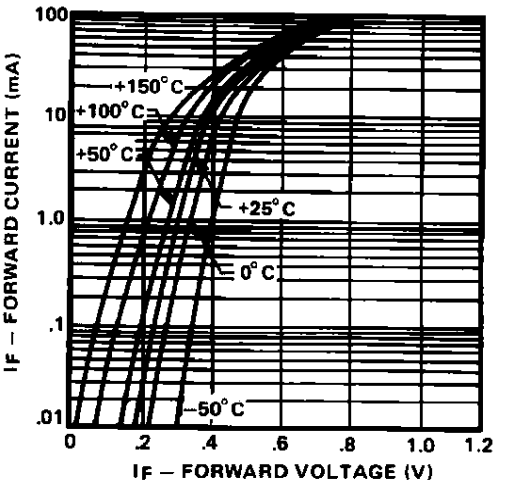
1-V CURVE SHOWING TYPICAL TEMPERATURE VARIATIONS FOR THE MA4E2810, 2812 SERIES SCHOTTKY DIODES.



I-V CURVE SHOWING TYPICAL TEMPERATURE VARIATIONS FOR THE MA4E2811 SERIES SCHOTTKY DIODES.



1-V CURVE SHOWING TYPICAL TEMPERATURE VARIATIONS FOR THE MA4E2835 SERIES SCHOTTKY DIODES.



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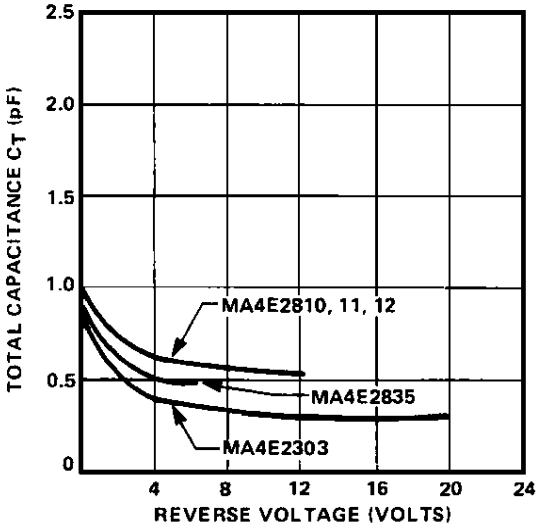
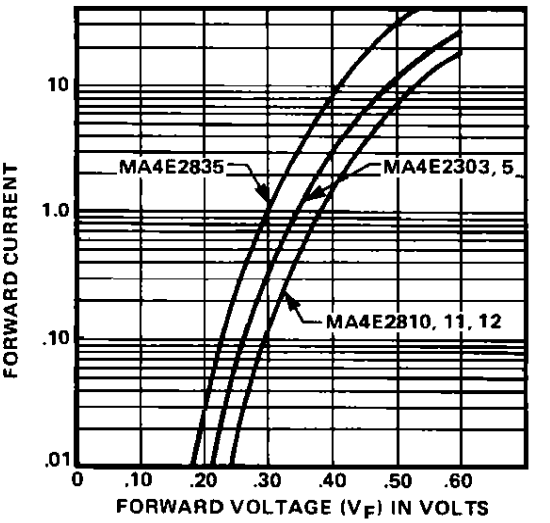
Typical Performance Curves (Cont'd)

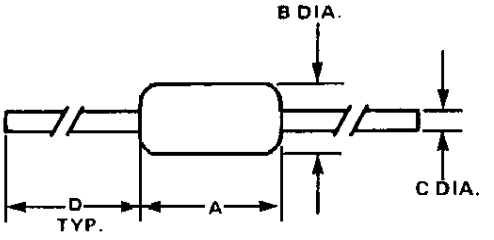
NOMINAL TOTAL CAPACITANCE vs REVERSE VOLTAGE AT 25°C



NOMINAL FORWARD CURRENT vs FORWARD VOLTAGE (AT 25°C)



Case Style 54



DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	0.145	0.165	3,68	4,19
B	0.068	0.075	1,72	1,91
C	0.014	0.016	0,35	0,41
D	1.000	1.500	25,40	38,10

C_P = 0.10 pF Typical
L_S = 1.00 nH Typical

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