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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

August 2016

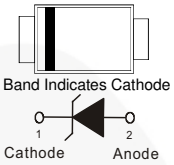
MMSZ5V6CF / MMSZ18VCF / MMSZ20VCF / MMSZ28VCF / MMSZ36VCF
1 W Zeners

Features

- Zener Diode with 5% Tolerance
- Ultra Thin Profile - Maximum Height of 1.08 mm
- UL Flammability 94V-0 Classification
- MSL 1
- RoHS Compliant / Green Mold Compound
- Industrial Device Qualified per AEC-Q101 Standards

  * See authorized use policy

SOD-123F



Ordering Information

Part Number	Top Mark	Package	Packing Method
MMSZ5V6CF	5G	SOD-123F	Tape and Reel
MMSZ18VCF	18	SOD-123F	Tape and Reel
MMSZ20VCF	20	SOD-123F	Tape and Reel
MMSZ28VCF	28	SOD-123F	Tape and Reel
MMSZ36VCF	36	SOD-123F	Tape and Reel

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter		Value	Units
P_D	Power Dissipation	T_L = 80°C	2.3	W
		T_A = 25°C	1	
T_J	Maximum Junction Temperature		+150	°C
T_{STG}	Storage Temperature Range		-55 to +150	°C

Note:

1. T_J = 25°C prior to surge

Thermal Characteristic

Symbol	Parameter	Value	Units
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient[2]	125	°C/W
Ψ_{JL}	Thermal Characteristic Parameter, Junction-to-Lead[2][3]	26	°C/W

Note:

2. Per JESD51-3 recommended thermal test board. Device mounted on FR-4 PCB, board size = 76.2 mm x 114.3 mm.

3. Thermocouple soldered at cathode lead.

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Device	V_Z (V) @ I_{ZT}(mA)				Z_{ZT}(Ω) @ I_{ZT}(mA)		Z_{ZK}(Ω) @ I_{ZK}(mA)		I_R(μA) @ V_R (V)		Average Vz Temp. Coefficient (mV/°C)
	Typ.	Min.	Max.	I_{ZT} (mA)	Max.	I_{ZT} (mA)	Max.	I_{ZK} (mA)	Max.	V_R (V)	
MMSZ5V6CF	5.6	5.32	5.88	100	4	100	600	1	10	2	1.52
MMSZ18VCF	18	17.10	18.90	25	15	25	750	0.25	1	13	14.59
MMSZ20VCF	20	19.00	21.0	25	15	25	750	0.25	1	15	15.79
MMSZ28VCF	28	26.60	29.40	25	15	25	1000	0.25	1	21	25.07
MMSZ36VCF	36	34.20	37.80	10	40	10	1000	0.25	1	27	32.35

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage	I_F = 0.2 A			1.2	V

Typical Performance Characteristics

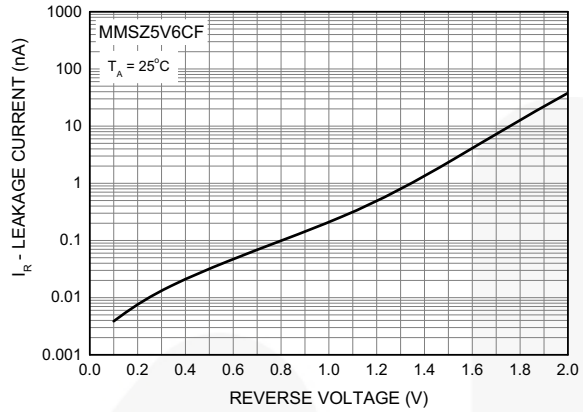


Figure 1. Leakage Current vs. Reverse Voltage for MMSZ5V6CF

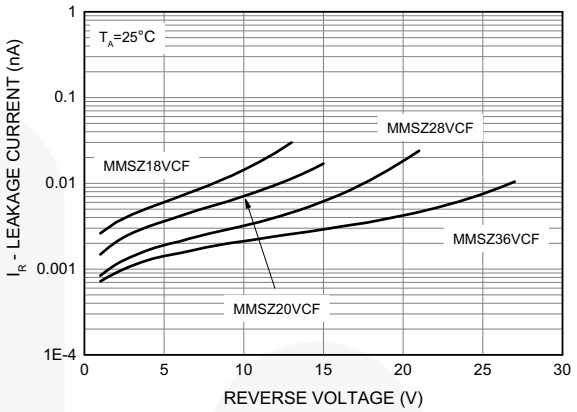


Figure 2. Leakage Current vs. Reverse Voltage for MMSZ18VCF,MMSZ20VCF, MMSZ28VCF and MMSZ36VCF

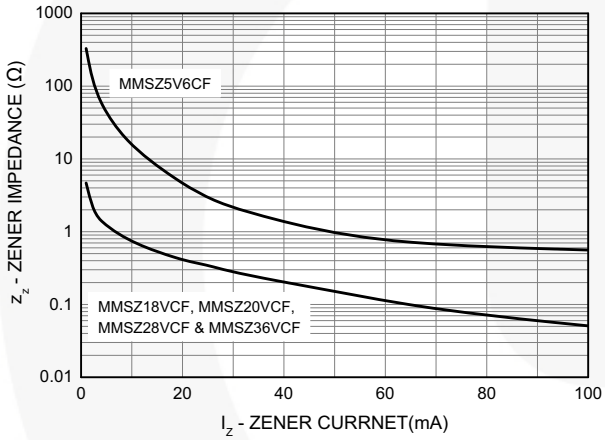


Figure 3. Zener Impedance vs. Zener Current

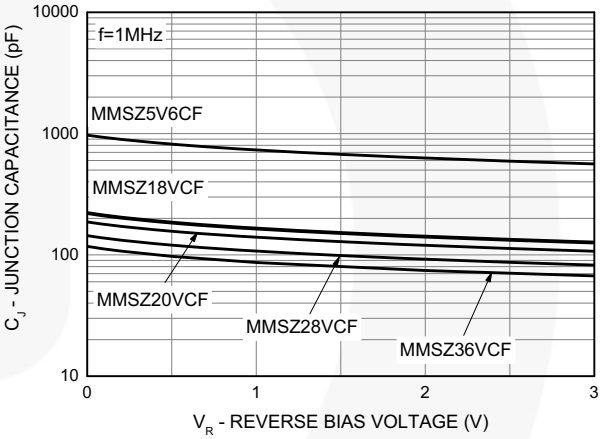


Figure 4. Junction Capacitance vs. Reverse Bias Voltage

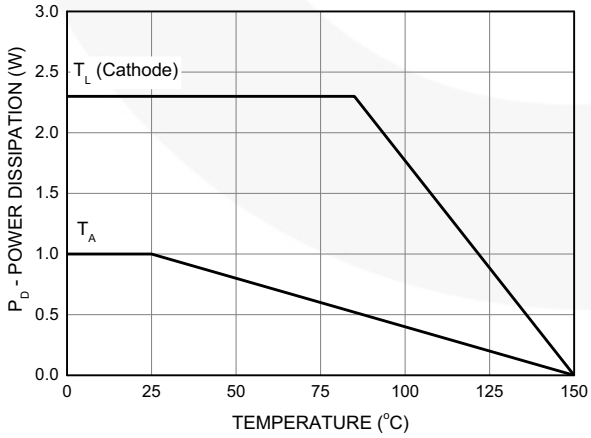


Figure 5. Power Derating Curve

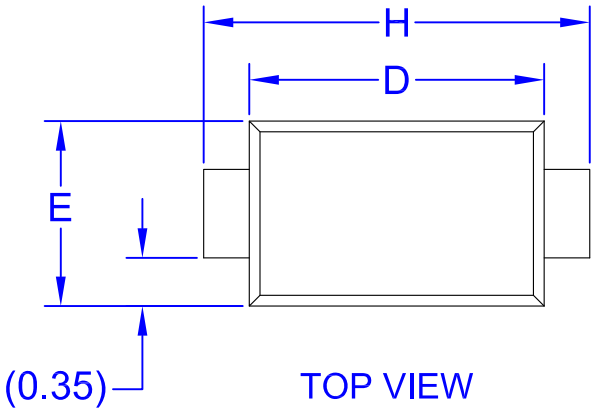
PACKAGE OUTLINE DRAWING

98A SUPPORTING DOCUMENTATION

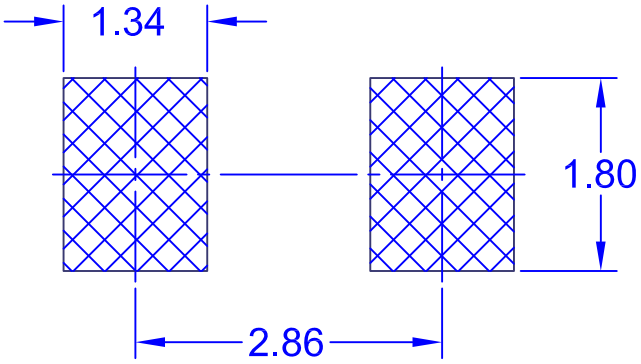
ON Semiconductor

SOD-123FL
CASE 425AD
ISSUE A

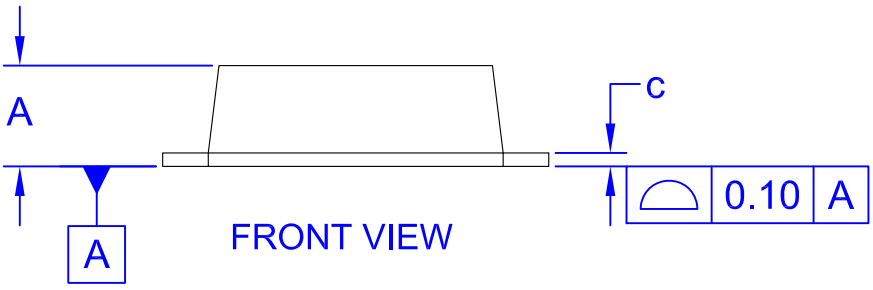
NOTES:
A. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE
B. ALL DIMENSIONS ARE IN MILLIMETERS
C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
D. DRAWING FILENAME: MKT-MA02Brev6



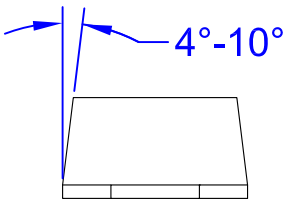
TOP VIEW



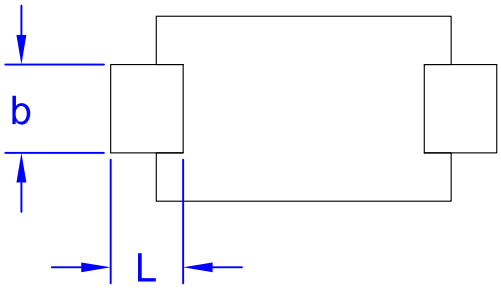
LAND PATTERN RECOMMENDATION



FRONT VIEW



SIDE VIEW



BOTTOM VIEW

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.031	0.043	0.80	1.08
b	0.020	0.045	0.50	1.15
c	0.002	0.008	0.05	0.20
D	0.098	0.118	2.50	3.00
E	0.059	0.077	1.50	1.95
H	0.130	0.154	3.30	3.90
L	0.018	0.035	0.45	0.90

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