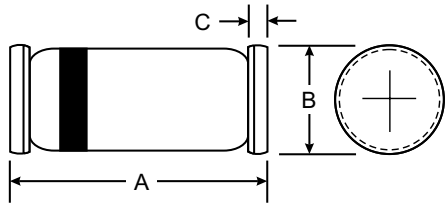
MCL103A - MCL103C

SURFACE MOUNT SCHOTTKY BARRIER DIODE

VOLTAGE RANGE: 20 - 40V
CURRENT: 350 mA

Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Low Reverse Recovery Time
- Low Reverse Capacitance



Mechanical Data

- Case: SOD-80/LL34, Glass
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.05 grams (approx.)

RoHS COMPLIANT

LL34/ SOD-80		
Dim	**Min**	**Max**
A	3.30	3.70
B	1.30	1.60
C	0.28	0.50
All Dimensions in mm		

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	MCL103A	MCL103B	MCL103C	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	40	30	20	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	21	14	V
Forward Continuous Current	I_{FM}	350			mA
Repetitive Peak Forward Current @ t ≤ 1.0s	I_{FRM}	1.0			A
Non-Repetitive Peak Forward Surge Current 8.3 ms Half Sine Wave	I_{FSM}	15			A
Power Dissipation	P_d	400			mW
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	300			K/W
Operating Junction Temeperature	T_j	125			°C
Storage Temperature Range	T_{STG}	-55 to +150			°C

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	MCL103A MCL103B MCL103C	$V_{(BR)R}$	40 30 20	—	—	V	I_{RS} = 100μA (pulsed)
Maximum Forward Voltage Drop		V_{FM}	—	—	0.37 0.60	V	I_F = 20mA I_F = 200mA
Maximum Peak Reverse Current	MCL103A MCL103B MCL103C	I_{RM}	—	—	5.0	μA	V_R = 30V V_R = 20V V_R = 10V
Junction Capacitance		C_j	—	50	—	pF	V_R = 0V, f = 1.0MHz
Reverse Recovery Time		t_{rr}	—	10	—	ns	I_F = I_R = 50mA to 200mA, I_{rr} = 0.1 x I_R, R_L = 100Ω

RATINGS AND CHARACTERISTIC CURVES MCL103A THRU MCL103C

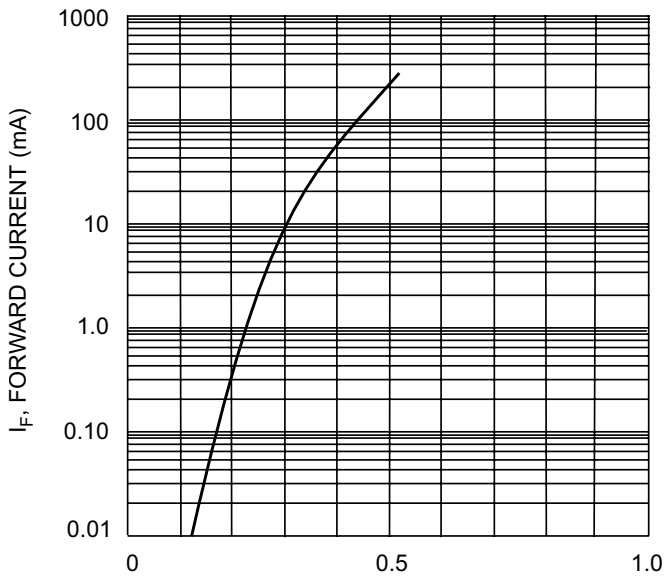


Fig. 1 Typical Forward Characteristics

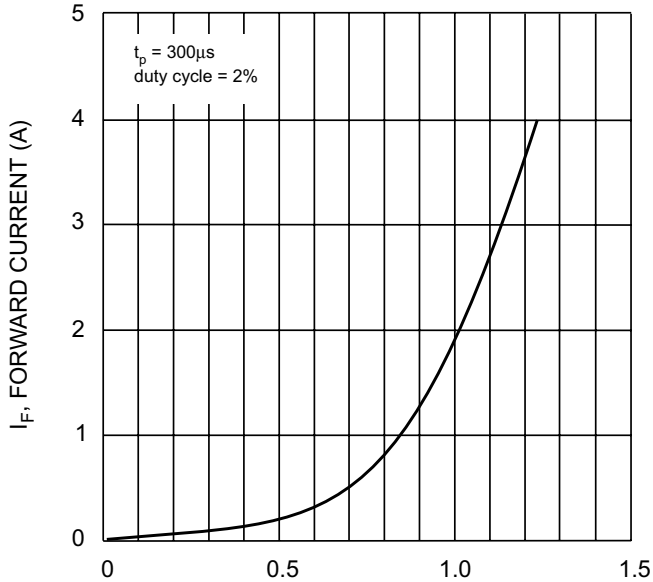


Fig. 2 Typical High Current Fwd Characteristics

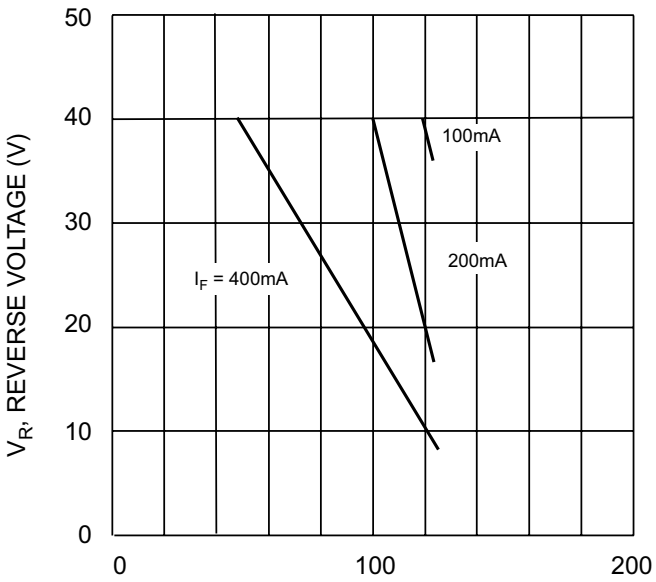


Fig. 3 Blocking Voltage Derating Curves

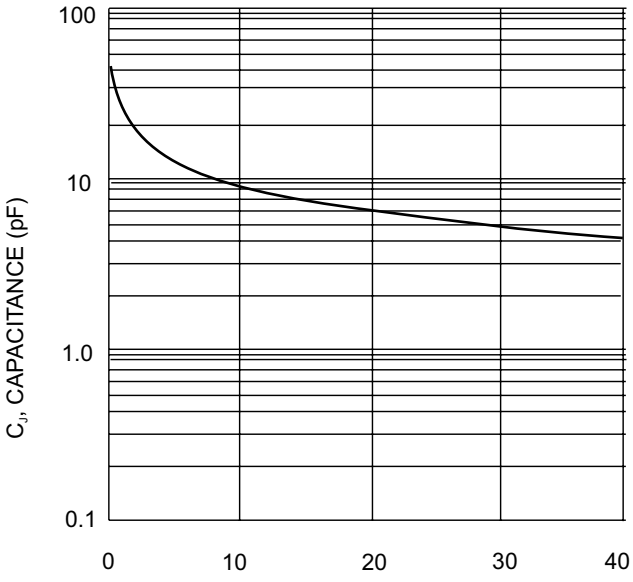


Fig. 4 Typ. Junction Capacitance vs Reverse Voltage