

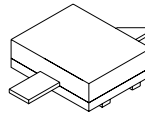
Product Description

The SL-1020 is Stanford Microdevices' high-linearity 10W LDMOS transistor designed for base station applications at or near 2000 MHz. Rated for minimum output power of 10W, it is ideal for CDMA, TDMA, GSM, FM, Single or Multi-Carrier Power Amplifiers in Class A or AB operation.

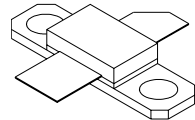
Patented LDMOS Technology is used to achieve high performance and reliability at a low cost. Dual nitride passivation and gold metallization ensure excellent device performance and reliability.

SL-1020

2000 MHz 10W Broadband 26V RF Power N-Channel Enhancement Mode LDMOS

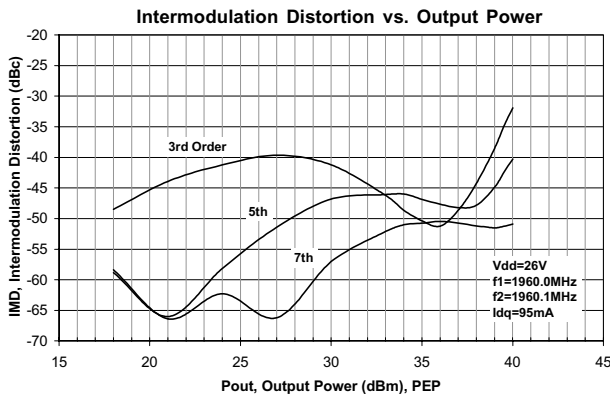


Model SLD-10201



Model SLD-10202

Available in pill or flange ceramic packages



Product Features

- Patented, High Reliability LDMOS Technology
- Low intermodulation distortion: -30dBc at 10W (PEP).
- Industry Standard Packages
- Surface-Mountable

Applications

- CDMA, TDMA, GSM, FM
- Single/Multi-Carrier Applications in Class A or AB operation

RF and Functional Tests

(Tc=25C unless otherwise specified, Stanford Microdevices broadband fixture)

Symbol	Rating	Unit	Min	Typ	Max
Gplin	Linear Power Gain, Single Tone (CW) (Vds=26V, Idq=95mA, Pout=3W, f=940 MHz)	dB	12.5	14.5	-
Gps	Compressed Power Gain, Single Tone (CW) (Vds=26V, Idq=95mA, Pout=10W, f=940 MHz)	dB	11.5	13.5	-
η	Drain Efficiency, Single Tone (CW) (Vds=26V, Idq=95mA, Pout=10W, f=940 MHz)	%	40	50	-
IMD	Intermodulation Distortion, Two Tone (Vds=26V, Idq=95mA, Pout=10W PEP, f1=940 MHz, f2=940.1 MHz)	dBc	-	-33	-30
VSWR	Load Mismatch Survivability (Vds=26V, Idq=95mA, Pout=10W, f=940 MHz)	-	10:1	-	-

The information provided herein is believed to be reliable at press time. Stanford Microdevices assumes no responsibility for inaccuracies or omissions. Stanford Microdevices assumes no responsibility for the use of this information, and all such information shall be entirely at the user's own risk. Prices and specifications are subject to change without notice. No patent rights or licenses to any of the circuits described herein are implied or granted to any third party. Stanford Microdevices does not authorize or warrant any Stanford Microdevices product for use in life-support devices and/or systems. Copyright 1999-2000 Stanford Microdevices, Inc. All worldwide rights reserved.

SL-1020 10W, 26V N-Channel Enhancement Mode LDMOS
AC Characteristics

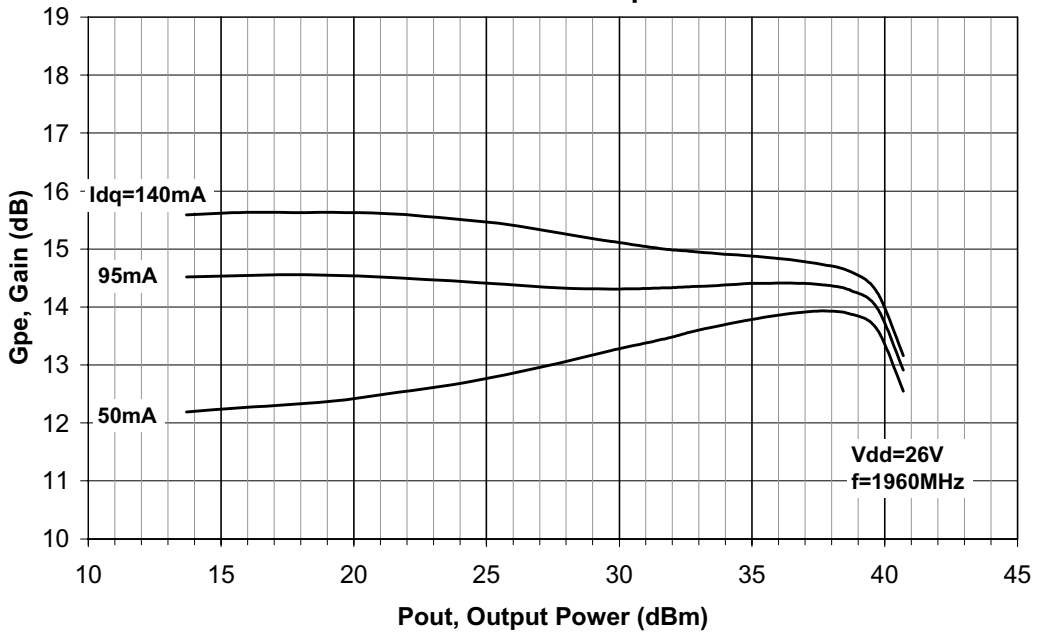
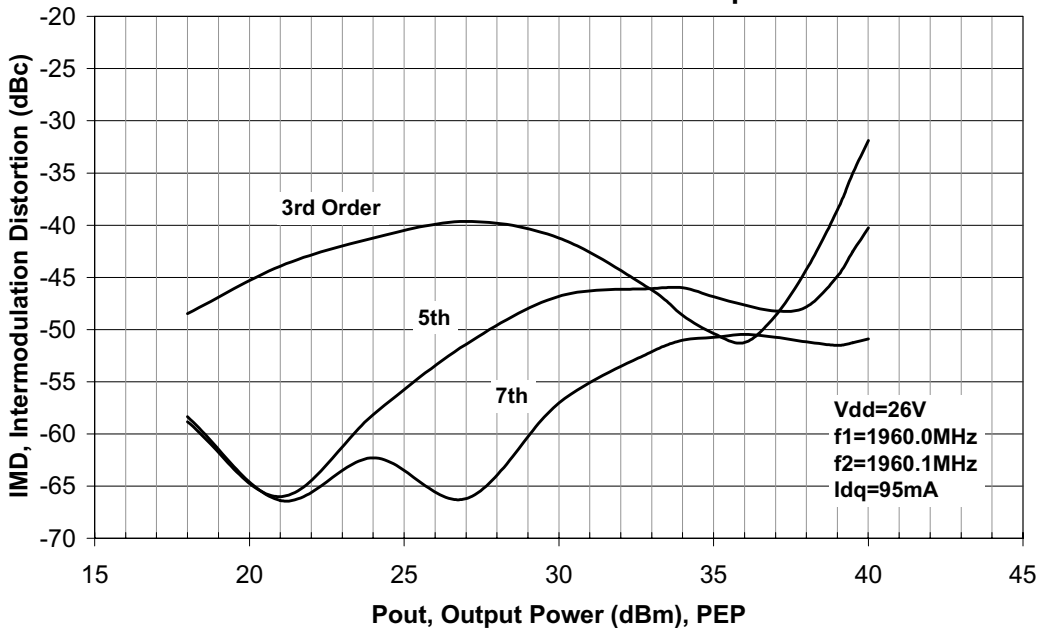
Symbol	Rating	Unit	Min	Typ	Max
Ciss	Input Capacitance (Vds=26V, Vgs=0V, f=1MHz)	pF	-	12.4	-
Coss	Output Capacitance (Vds=26V, Vgs=0V, f=1MHz)	pF	-	8.5	-
Crss	Feedback Capacitance (Vds=26V, Vgs=0V, f=1MHz)	pF	-	0.6	-

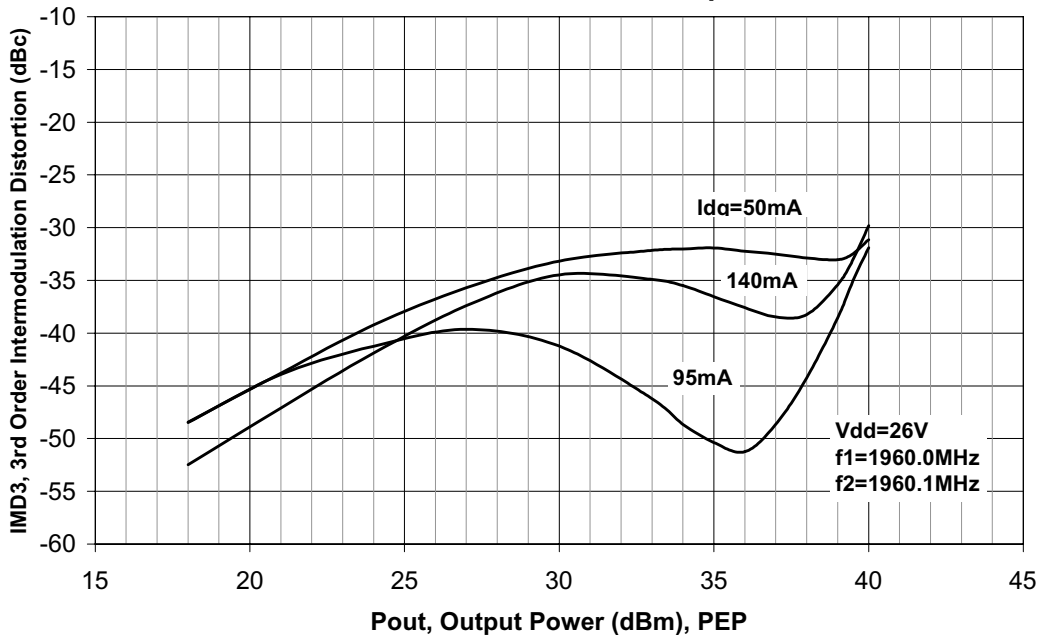
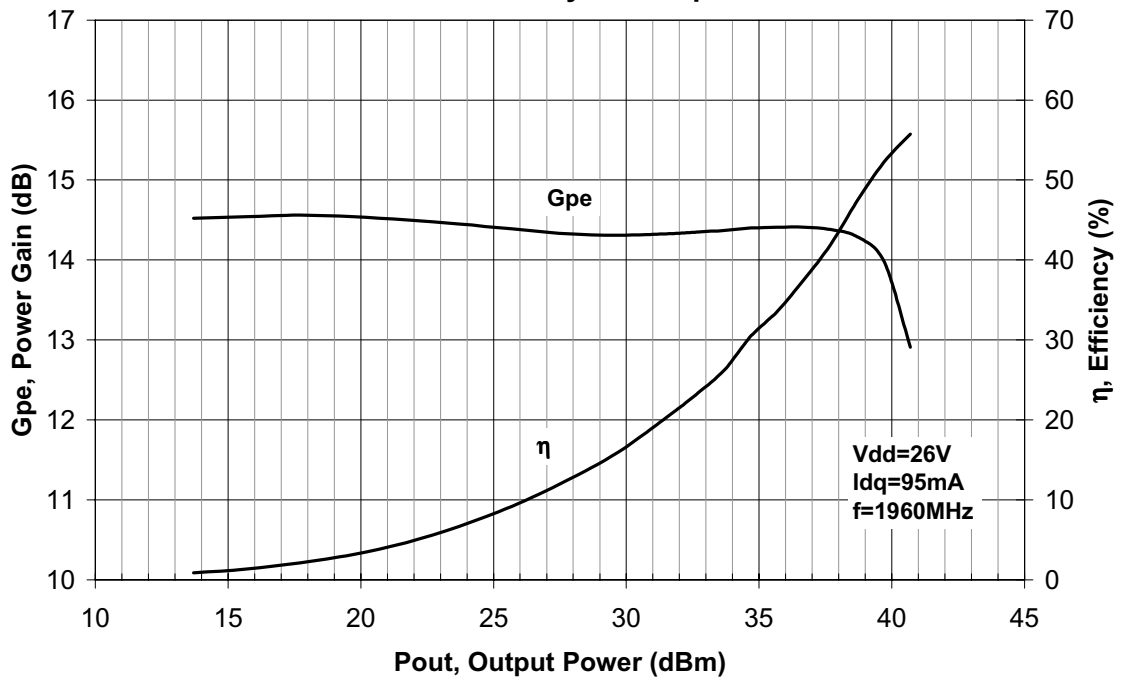
Electrical DC Characteristics (Tc=25°C unless otherwise specified)

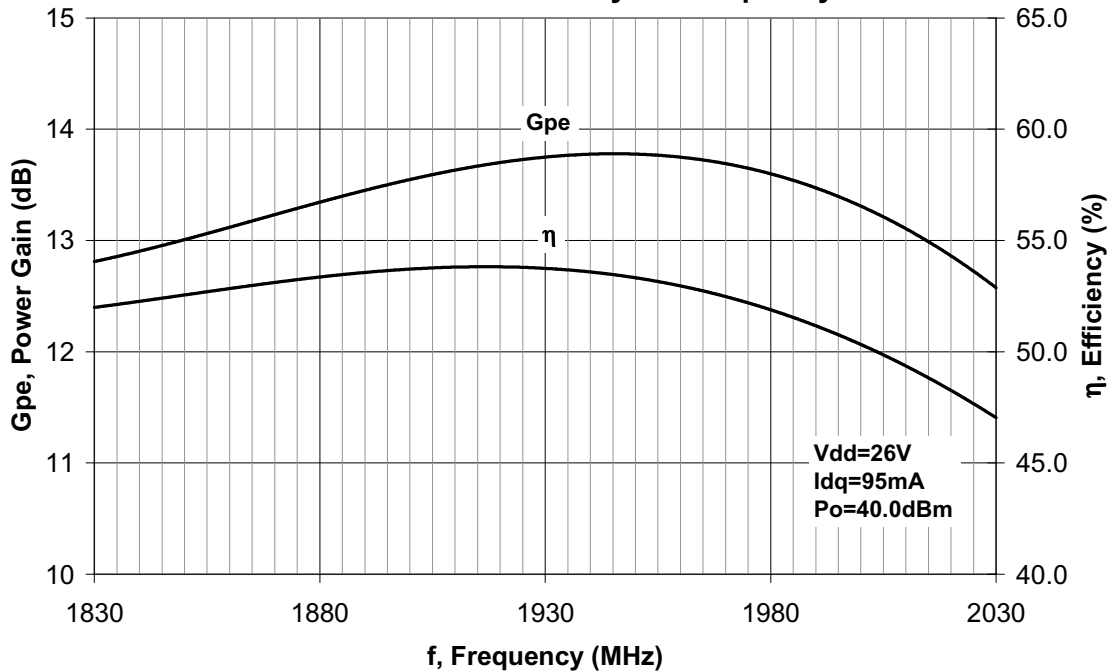
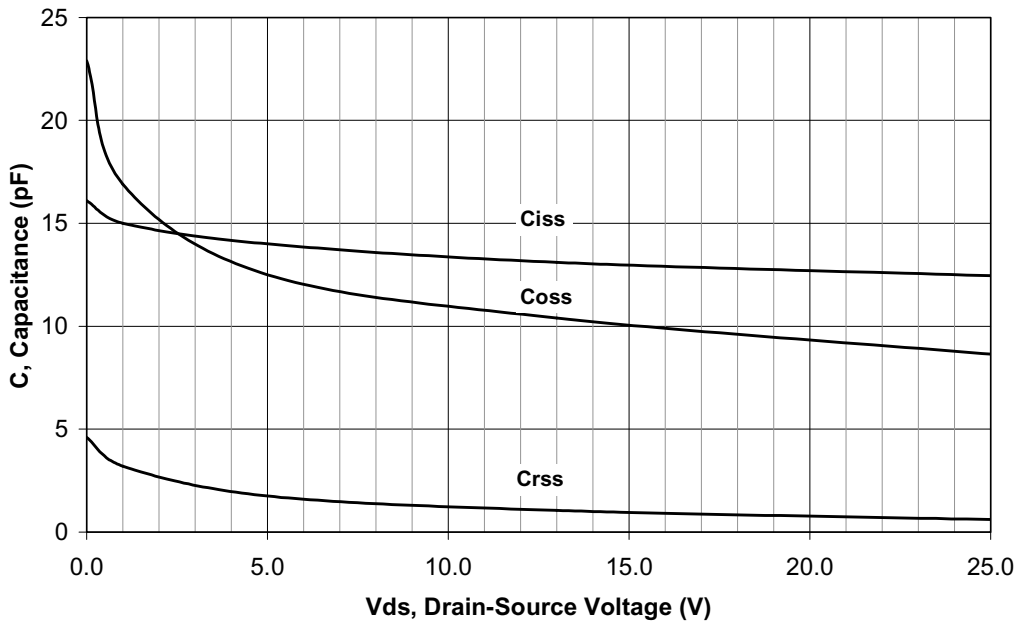
Symbol	Characteristics	Unit	Min	Typ	Max
BVdss	Drain to Source Voltage, gate connected to source (Vgs=0V, Ids=1mA)	Volts	65	-	-
Idss	Drain to Source Leakage Current (Vds=28V, Vgs=0)	uA	-	-	100
Igss	Gate to Source Leakage Current (Vgs=20V, Vds=0)	uA	-	-	1.0
Vth	Threshold Voltage (Vds=10V, Ids=1mA)	Volts	2.0	3.0	5.0
Vgs (on)	Gate Quiescent Voltage (Vds=26V, Ids=95mA)	Volts	3.0	4.0	6.0
Vds (on)	Drain to Source On Voltage (Vgs=10V, Ids=1A)	Volts	-	0.9	-
Gm	Forward Transconductance (Vds=10V, Ids=5A)	S	-	0.5	-

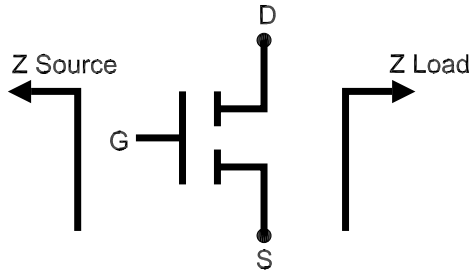
Thermal Characteristics

Symbol	Characteristics	Unit	Min	Typ	Max
Θjc	Thermal Resistance, Junction to Case	°C/W	-	-	6.2

Power Gain vs. Output Power

Intermodulation Distortion vs. Output Power


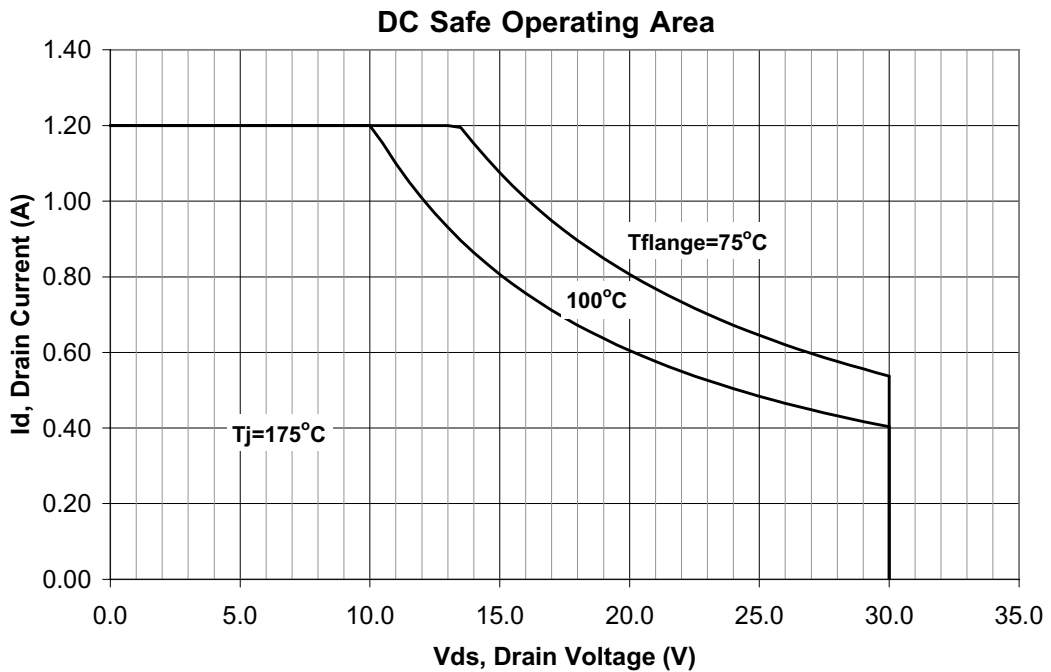
SL-1020 10W, 26V N-Channel Enhancement Mode LDMOS
Intermodulation Distortion vs. Output Power

Power Gain & Efficiency vs. Output Power


Power Gain & Efficiency vs. Frequency

Capacitance vs. Drain Voltage


SL-1020 10W, 26V N-Channel Enhancement Mode LDMOS


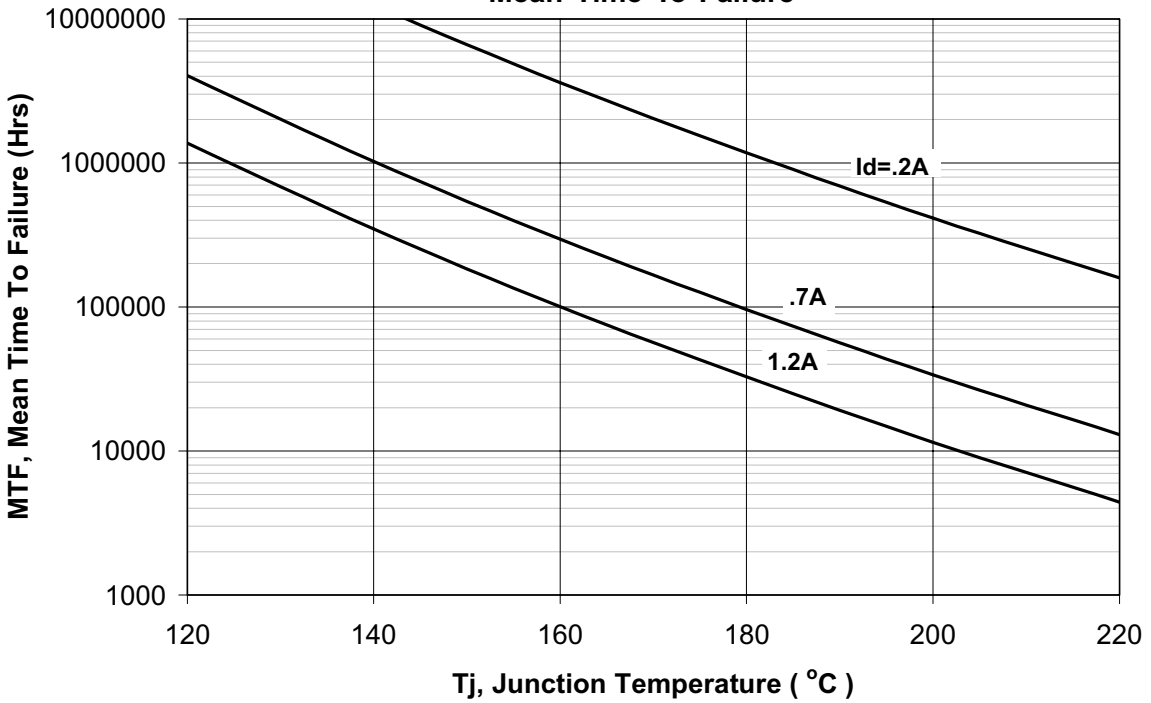
Frequency MHz	Z Source	Z Load
1800	2.41 + j4.97	3.04 - j0.33
1960	2.23 + j4.47	2.59 - j0.88
2000	2.18 + j4.36	2.49 - j1.09

Series Equivalent Input and Output Impedances, V_{dd}= 26V, I_{dq}= 95mA



SL-1020 10W, 26V N-Channel Enhancement Mode LDMOS

Mean Time To Failure



SL-1020 10W, 26V N-Channel Enhancement Mode LDMOS

Absolute Maximum Ratings

	J	00	2

Part Number Ordering Information

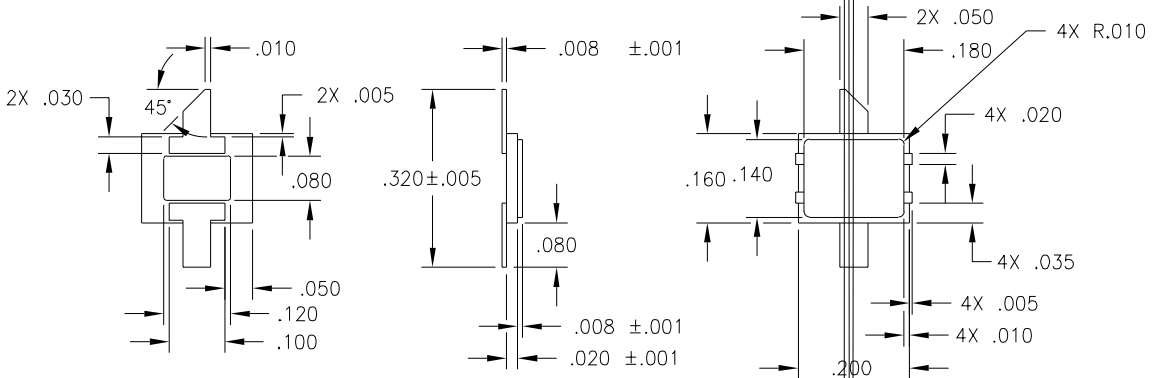
Part Number	
-------------	--

Caution:
MOS Devices are susceptible to damage from ElectroStatic Discharge (ESD). Appropriate precautions in handling, packaging and testing MOS devices must be observed.

Pill Package

Note:

- 1) Lid not shown
- 2) Cut lead identifies drain



Flange Package

Note:

- 1) Lid not shown
- 2) Cut lead identifies drain

