



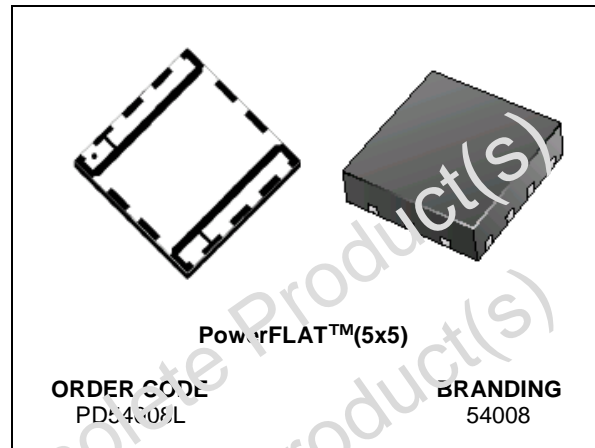
PD54008L

RF POWER TRANSISTORS The *LdmoST* PLASTIC FAMILY

ADVANCED DATA

N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

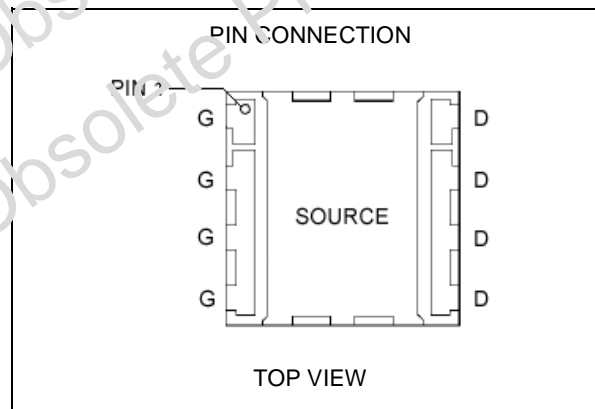
- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- BROADBAND PERFORMANCES
P_{OUT} = 8 W WITH 15 dB GAIN @ 500 MHz
- NEW LEADLESS PLASTIC PACKAGE
- ESD PROTECTION
- SUPPLIED IN TAPE & REEL OF 3K UNITS



DESCRIPTION

The PD54008L is a common source N-Channel, enhancement-mode lateral Field-Effect RF power transistor. It is designed for high gain, broad band commercial and industrial applications. It operates at 7 V in common source mode at frequencies of up to 1 GHz. PD54008L boasts the excellent gain, linearity and reliability of STH1LV latest LDMOS technology mounted in the innovative leadless SMD plastic package, PowerFLAT™.

PD54008L's superior linearity performance makes it an ideal solution for portable radio.



ABSOLUTE MAXIMUM RATINGS (T_{case} = 25 °C)

Symbol	Parameter	Value	Unit
V _{(BR)DSS}	Drain-Source Voltage	25	V
V _{GS}	Gate-Source Voltage	-0.5 to +15	V
I _D	Drain Current	5	A
P _{DISS}	Power Dissipation (@ T _c = 70°C)	26.7	W
T _j	Max. Operating Junction Temperature	150	°C
T _{STG}	Storage Temperature	-65 to +150	°C

THERMAL DATA

R _{th(j-c)}	Junction -Case Thermal Resistance	3	°C/W
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PD54008L

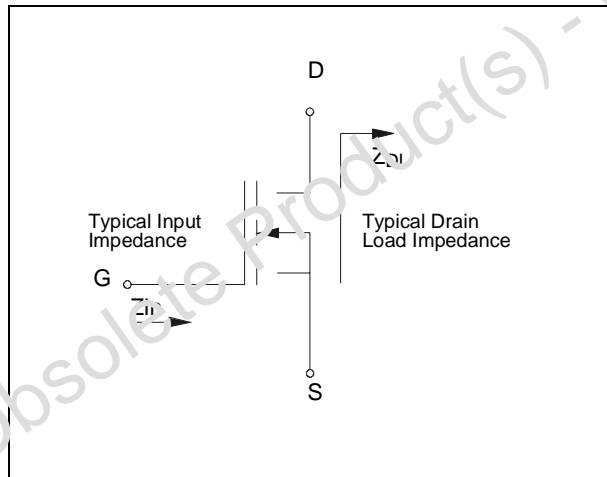
ELECTRICAL SPECIFICATION (T_{CASE} = 25 °C)

STATIC (Per Section)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I _{DSS}	V _{GS} = 0 V	V _{DS} = 25 V			1	μA
I _{GSS}	V _{GS} = 5 V	V _{DS} = 0 V			1	μA
V _{GS(Q)}	V _{DS} = 10 V	I _D = 50 mA	2.0		5.0	V
V _{DS(ON)}	V _{GS} = 10 V	I _D = 0.5 A		0.09		V
C _{ISS}	V _{GS} = 0 V	V _{DS} = 7.5 V		80		pF
C _{OSS}	V _{GS} = 0 V	V _{DS} = 7.5 V		60		pF
C _{RSS}	V _{GS} = 0 V	V _{DS} = 7.5 V		6.6		pF

DYNAMIC

Symbol	Test Conditions				Min.	Typ.	Max.	Unit
P _{1dB}	V _{DD} = 7.5 V	I _{DQ} = 200 mA		f = 500 MHz	8			W
G _{PS}	V _{DD} = 7.5 V	I _{DQ} = 200 mA	P _{OUT} = 8 W	f = 500 MHz	15			dB
η _D	V _{DD} = 7.5 V	I _{DQ} = 200 mA	P _{OUT} = 8 W	f = 500 MHz	50			%
Load mismatch	V _{DD} = 9.5 V	I _{DQ} = 200 mA	P _{OUT} = 8 W	f = 500 MHz	20:1			VSWR
	ALL PHASE ANGLES							



IMPEDANCE DATA ⁽¹⁾

FREQ. (MHz)	Z _{IN} (Ω)	Z _{DL} (Ω)
480	1.12 - j 2.02	2.01 + j 0.13
500	1.3 - j 2.01	1.84 + j 0.7
520	1.66 - j 2.55	1.66 + j 1.51

(1) In Broadband amplifier

ESD PROTECTION CHARACTERISTICS

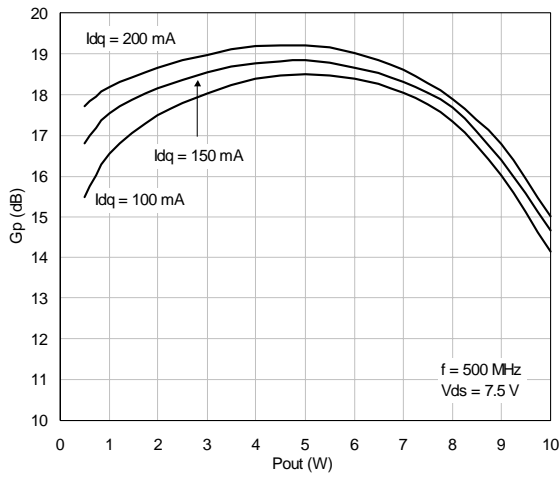
Test Conditions	Class
Human Body Model	2
Machine Model	M3

MOISTURE SENSITIVITY LEVEL

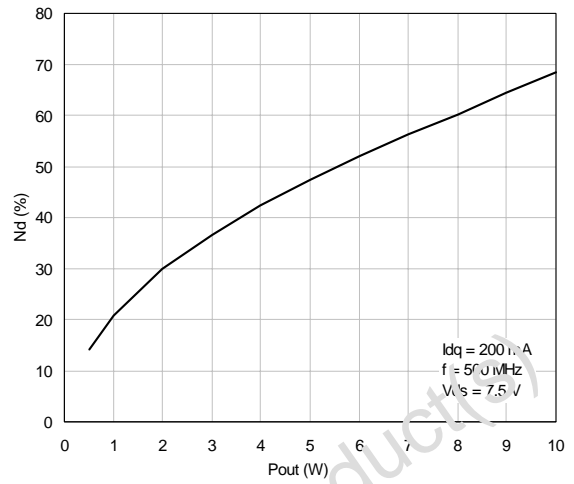
Test Methodology	Rating
J-STD-020B	MSL 3

TYPICAL PERFORMANCE

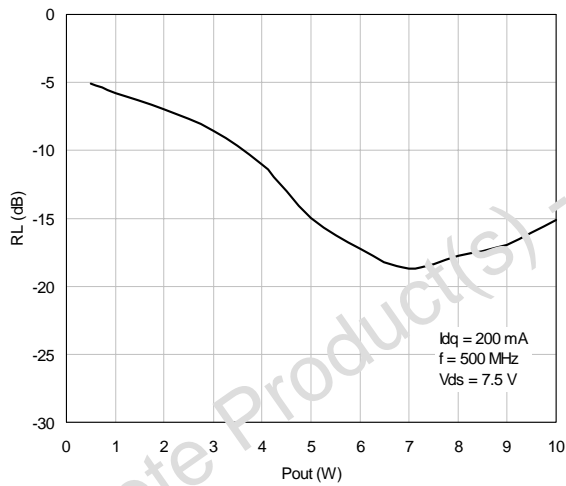
Power Gain Vs Output Power



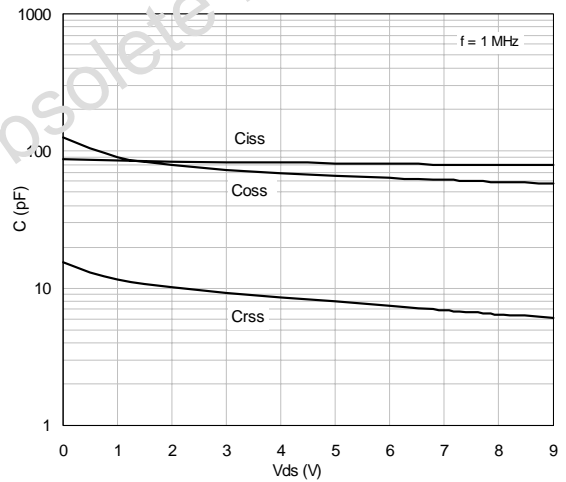
Efficiency Vs Output Power



Return Loss Vs Output Power



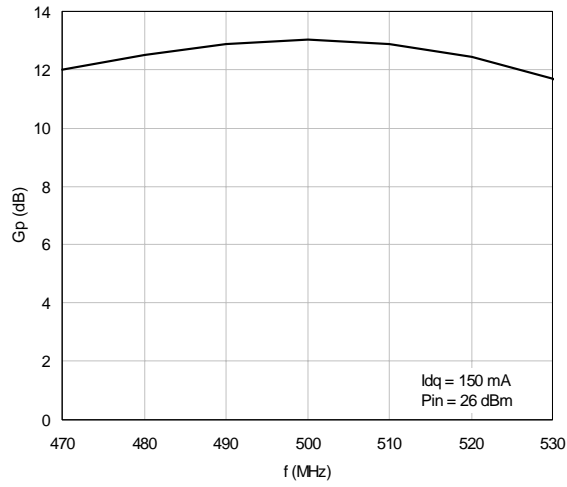
Capacitance Vs Supply Voltage



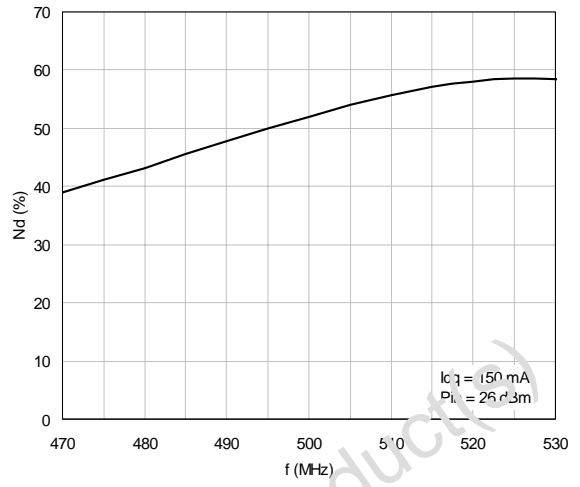
PD54008L

TYPICAL PERFORMANCE

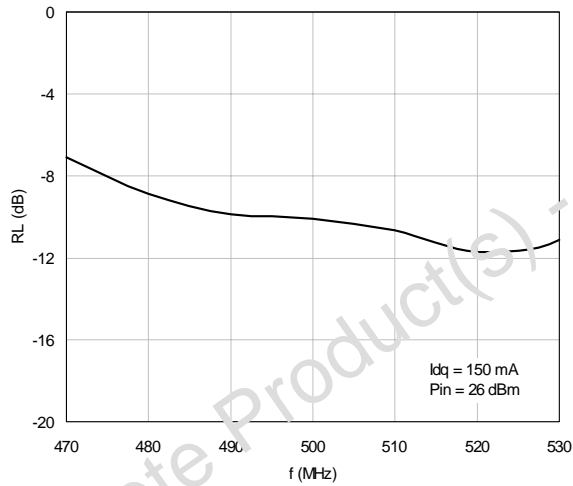
Power Gain Vs Frequency (BROADBAND)



Efficiency Vs Frequency (BROADBAND)

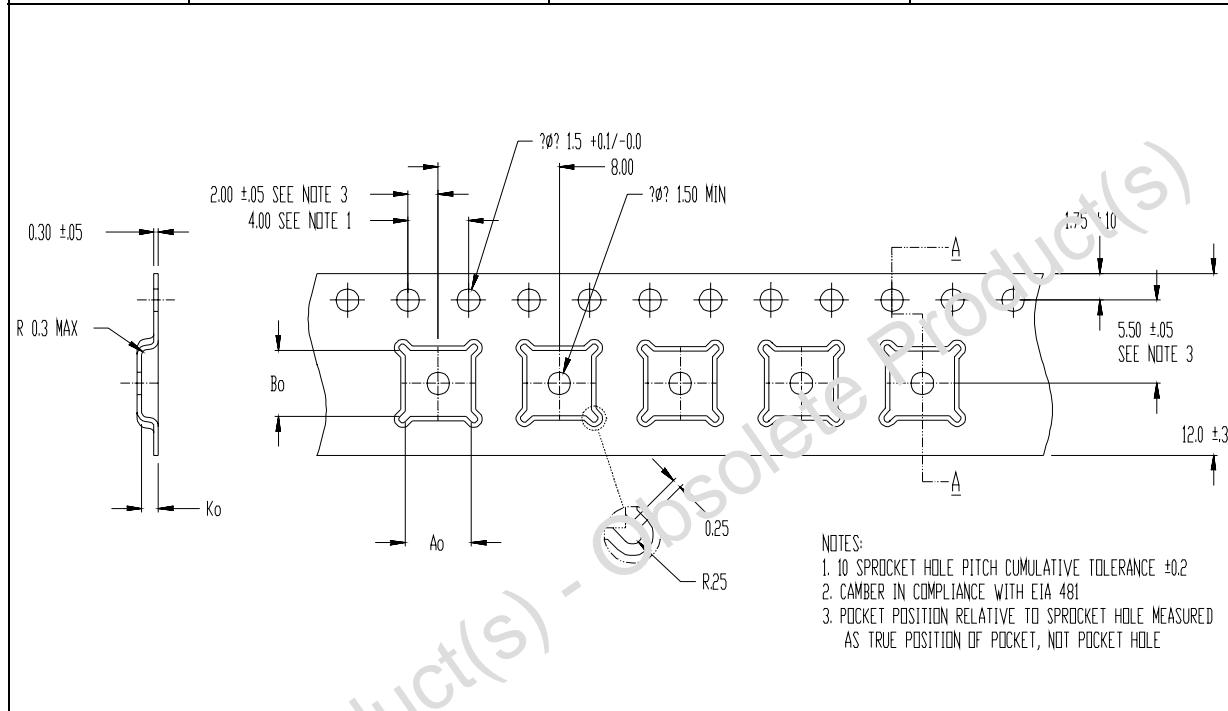


Return Loss Vs Frequency (BROADBAND)



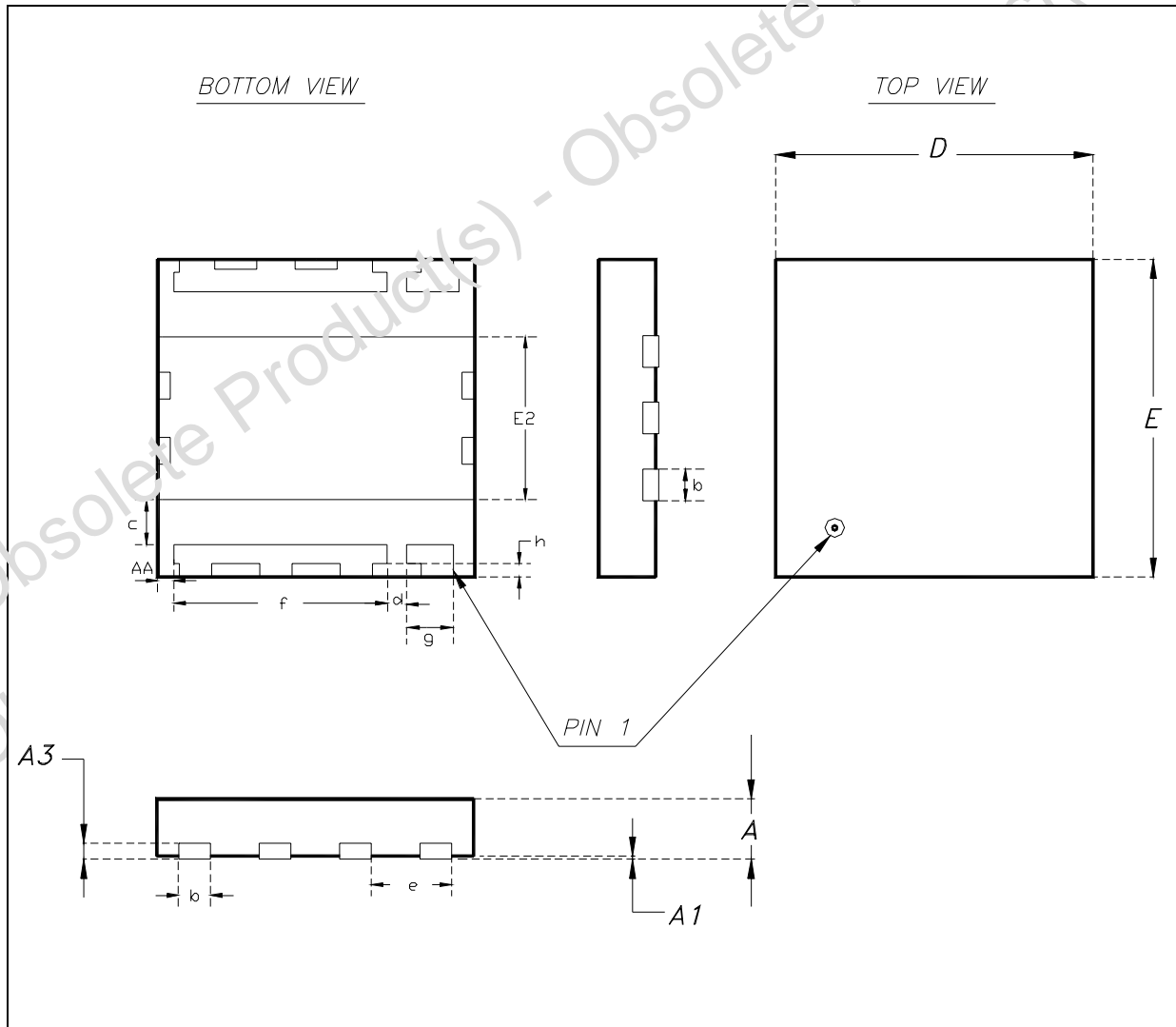
TAPE & REEL DIMENSIONS

	mm		
	MIN.	TYP.	MAX
Ao	5.15	5.25	5.35
Bo	5.15	5.25	5.35
Ko	1.0	1.1	1.2



PowerFLAT™ MECHANICAL DATA

DIM.	mm			Inch		
	MIN.	TYP.	MAX	MIN.	TYP.	MAX
A		0.90	1.00		0.035	0.039
A1		0.02	0.05		0.001	0.002
A3		0.24			0.009	
AA	0.15	0.25	0.35	0.006	0.01	0.014
b	0.43	0.51	0.58	0.017	0.020	0.023
c	0.64	0.71	0.79	0.025	0.028	0.031
D		5.00			0.197	
d		0.30			0.011	
E		5.00			0.197	
E2	2.49	2.57	2.64	0.098	0.101	0.104
e		1.27			0.050	
f		3.37			0.132	
g		0.74			0.03	
h		0.21			0.008	



Obsolete Product(s) - Obsolete Product(s)
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