



PD54003-01

RF POWER TRANSISTORS The *LdmoST* PLASTIC FAMILY

TARGET DATA

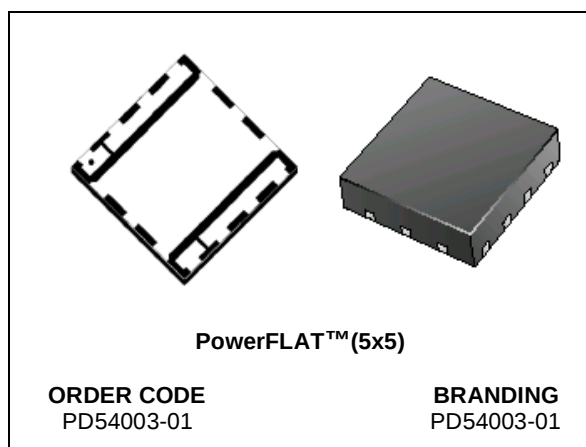
N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- $P_{OUT} = 3\text{ W}$ WITH 12 dB gain @ 500 MHz
- NEW LEADLESS PLASTIC PACKAGE

DESCRIPTION

The PD54003-01 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. PD54003-01 boasts the excellent gain, linearity and reliability of ST's latest LDMOS technology mounted in the innovative leadless SMD plastic package, PowerFLAT™.

PD54003-01's superior linearity performance makes it an ideal solution for portable radio.



ABSOLUTE MAXIMUM RATINGS ($T_{CASE} = 25\text{ }^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
$V_{(BR)DSS}$	Drain-Source Voltage	25	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current	4	A
P_{DISS}	Power Dissipation (@ $T_c = 70^{\circ}\text{C}$)	TBD	W
T_j	Max. Operating Junction Temperature	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-65 to +150	$^{\circ}\text{C}$

THERMAL DATA

$R_{th(j-c)}$	Junction -Case Thermal Resistance	TBD	$^{\circ}\text{C/W}$
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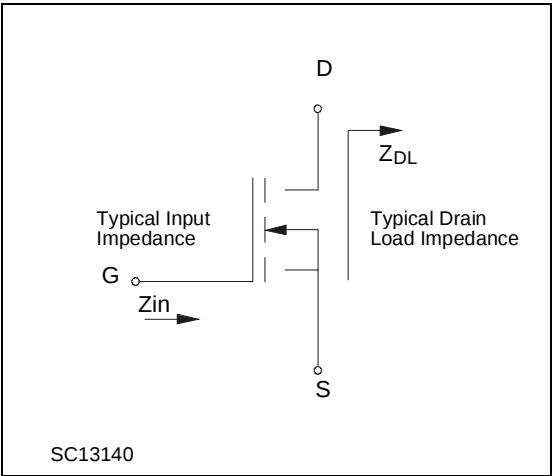
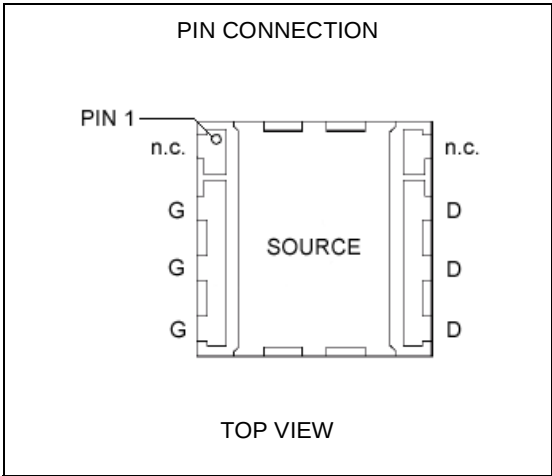
ELECTRICAL SPECIFICATION (T_{CASE} = 25 °C)

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} = 20 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 = 1 A			1.3	V
g _{FS}	V _{DS} = 10 V	I _D = 3.2 A		1.7		mho
C _{ISS}	V _{GS} = 0 V	V _{DS} = 7.5 V	f = 1 MHz		59	pF
C _{OSS}	V _{GS} = 0 V	V _{DS} = 7.5 V	f = 1 MHz		43	pF
C _{RSS}	V _{GS} = 0 V	V _{DS} = 7.5 V	f = 1 MHz		4.0	pF

DYNAMIC

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
P _{OUT}	V _{DD} = 7.5 V	I _{DQ} = 50 mA f = 500 MHz	3			W
G _{PS}	V _{DD} = 7.5 V	I _{DQ} = 50 mA P _{OUT} = 3 W f = 500 MHz	10	12		dB
η _D	V _{DD} = 7.5 V	I _{DQ} = 50 mA P _{OUT} = 3 W f = 500 MHz	50	55		%
Load mismatch	V _{DD} = 9.5 V	I _{DQ} = 50 mA P _{OUT} = 3 W f = 500 MHz ALL PHASE ANGLES	20:1			VSWR

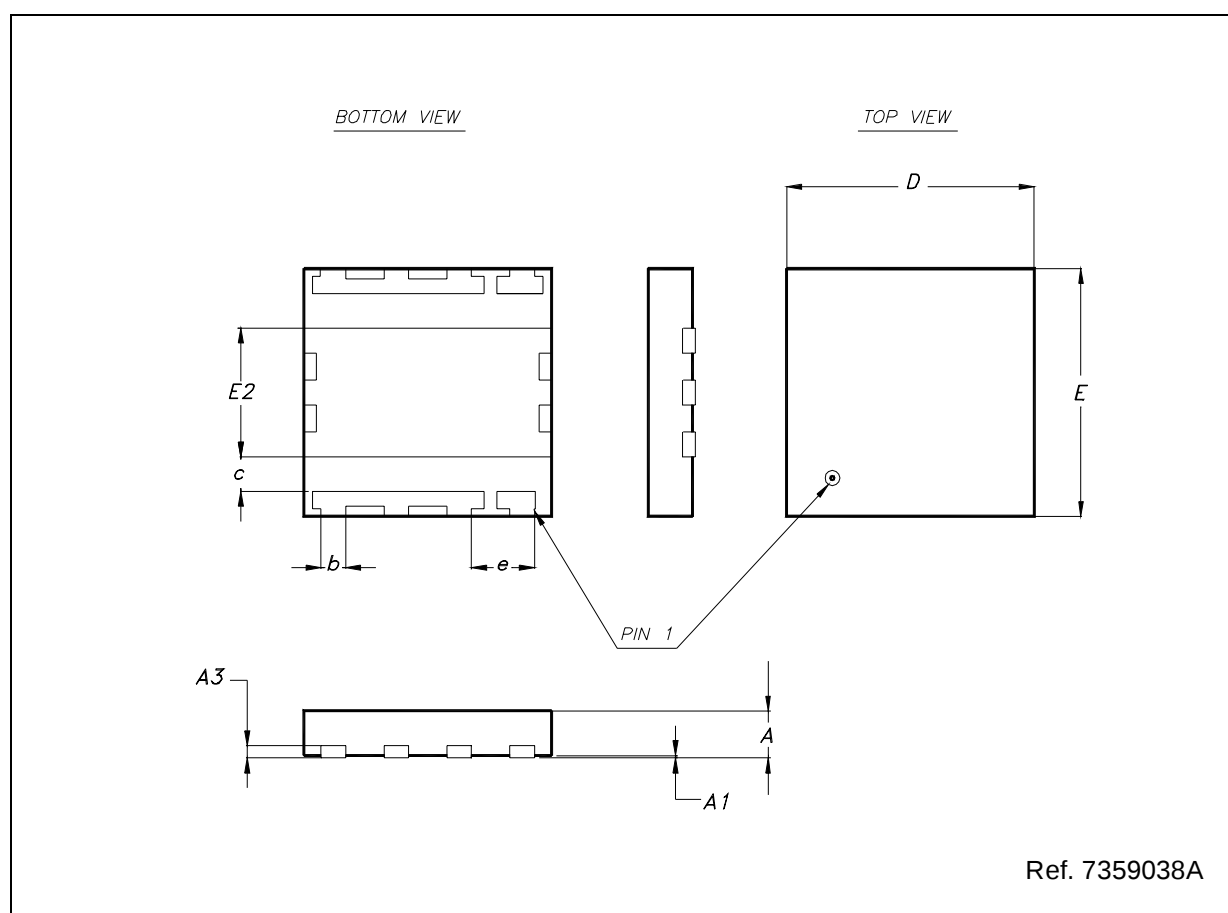


IMPEDANCE DATA

FREQ. MHz	Z _{IN} (Ω)	Z _{DL} (Ω)
480	TBD	TBD
500	TBD	TBD
520	TBD	TBD

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	
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	
E		5.00			0.197	
E2	2.49	2.57	2.64	0.098	0.101	0.104
e		1.27			0.050	



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