

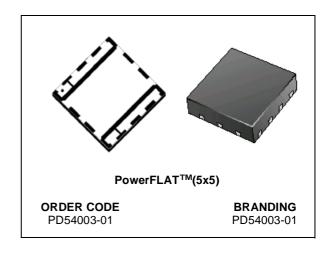
PD54003-01

RF POWER TRANSISTORS The LdmoST PLASTIC FAMILY

TARGET DATA

N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- Pout = 3 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, PowerFLATTM.

PD54003-01'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	± 20	V
ID	Drain Current	4	Α
P _{DISS}	Power Dissipation (@ Tc = 70°C)	TBD	W
Tj	Max. Operating Junction Temperature	150	°C
T _{STG}	Storage Temperature	-65 to +150	°C

THERMAL DATA

R _{th(j-c)} Junction -Case Thermal Resistance	TBD	°C/W
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February, 21 2002 1/4

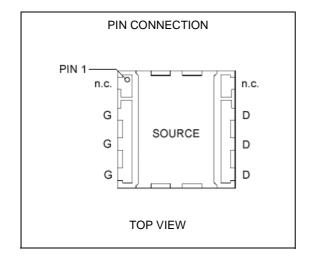
ELECTRICAL SPECIFICATION (T_{CASE} = 25 °C)

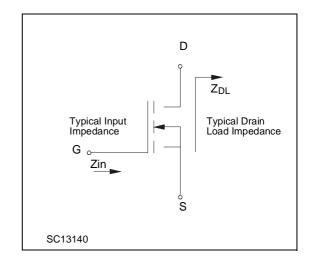
STATIC (Per Section)

Symbol		Test Conditio	ns	Min.	Тур.	Max.	Unit
I _{DSS}	V _{GS} = 0 V	V _{DS} = 25 V				1	μΑ
I _{GSS}	V _{GS} = 20 V	V _{DS} = 0 V				1	μΑ
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.	Тур.	Max.	Unit
Pout	$V_{DD} = 7.5 \text{ V}$ $I_{DQ} = 50 \text{ mA}$ $f = 500 \text{ MHz}$	3			W
G _{PS}	$V_{DD} = 7.5 \text{ V}$ $I_{DQ} = 50 \text{ mA}$ $P_{OUT} = 3 \text{ W}$ $f = 500 \text{ MHz}$	10	12		dB
η _D	$V_{DD} = 7.5 \text{ V}$ $I_{DQ} = 50 \text{ mA}$ $P_{OUT} = 3 \text{ W}$ $f = 500 \text{ MHz}$	50	55		%
Load mismatch	$V_{DD} = 9.5 \text{ V}$ $I_{DQ} = 50 \text{ mA}$ $P_{OUT} = 3 \text{ W}$ $f = 500 \text{ MHz}$ ALL PHASE ANGLES	20:1			VSWR





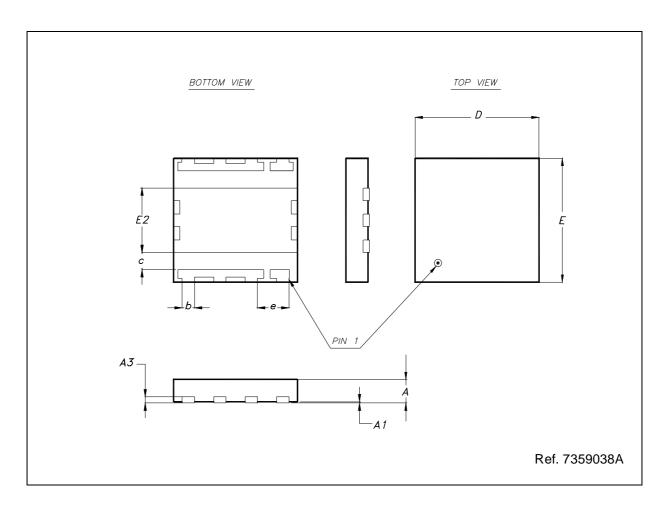
IMPEDANCE DATA

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

2/4

PowerFLAT[™] MECHANICAL DATA

	mm			Inch			
DIM.	MIN.	TYP.	MAX	MIN.	TYP.	MAX	
Α		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	
С	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	
е		1.27			0.050		



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47/