



## PD57006-01

### RF POWER TRANSISTORS The LdmoST Plastic FAMILY

TARGET DATA

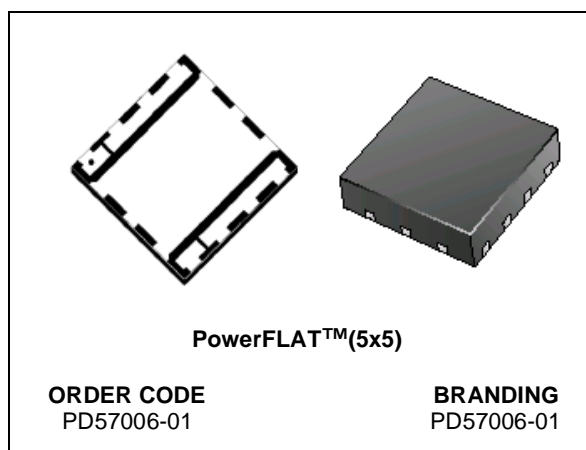
#### N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- $P_{OUT} = 6\text{ W}$  with 15 dB gain @ 945 MHz / 28V
- NEW LEADLESS PLASTIC PACKAGE

#### DESCRIPTION

The PD57006-01 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 28 V in common source mode at frequencies of up to 1 GHz. PD57006-01 boasts the excellent gain, linearity and reliability of ST's latest LDMOS technology mounted in the innovative leadless SMD plastic package, PowerFLAT™.

It is ideal for digital cellular BTS applications requiring high linearity.



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

Symbol	Parameter	Value	Unit
$V_{(BR)DSS}$	Drain-Source Voltage	65	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Drain Current	1	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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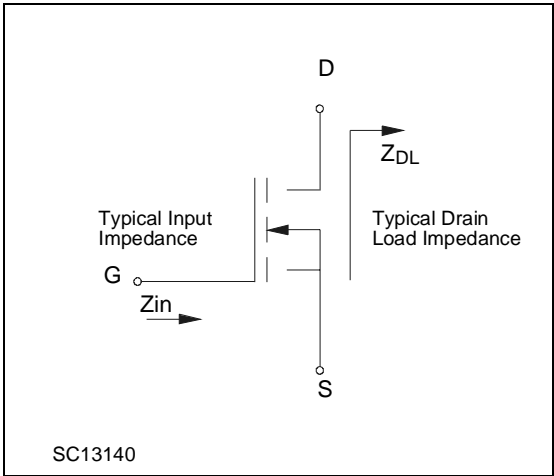
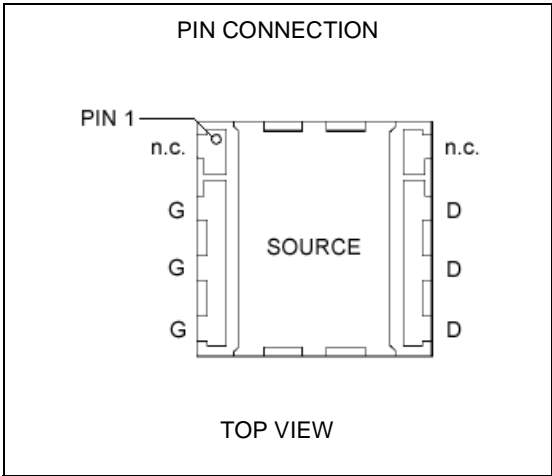
ELECTRICAL SPECIFICATION (T<sub>CASE</sub> = 25 °C)

STATIC

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0 V	I <sub>D</sub> = 10 mA	65			
I <sub>DSS</sub>	V <sub>GS</sub> = 0 V	V <sub>DS</sub> = 28 V			1	μA
I <sub>GSS</sub>	V <sub>GS</sub> = 20 V	V <sub>DS</sub> = 0 V			1	μA
V <sub>GS(Q)</sub>	V <sub>DS</sub> = 28 V	I <sub>D</sub> = 70 mA	2.0		5.0	V
V <sub>DS(ON)</sub>	V <sub>GS</sub> = 10 V	I <sub>D</sub> = 0.5 A			0.9	V
g <sub>FS</sub>	V <sub>DS</sub> = 10 V	I <sub>D</sub> = 800 mA		0.58		mho
C <sub>ISS</sub>	V <sub>GS</sub> = 0 V	V <sub>DS</sub> = 28 V		27		pF
C <sub>OSS</sub>	V <sub>GS</sub> = 0 V	V <sub>DS</sub> = 28 V		14		pF
C <sub>RSS</sub>	V <sub>GS</sub> = 0 V	V <sub>DS</sub> = 28 V		0.9		pF

DYNAMIC

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
P <sub>OUT</sub>	V <sub>DD</sub> = 28 V	I <sub>DQ</sub> = 70 mA      f = 945 MHz	6			W
G <sub>P</sub>	V <sub>DD</sub> = 28 V	I <sub>DQ</sub> = 70 mA    P <sub>OUT</sub> = 6 W    f = 945 MHz	14	15		dB
η <sub>D</sub>	V <sub>DD</sub> = 28 V	I <sub>DQ</sub> = 70 mA    P <sub>OUT</sub> = 6 W    f = 945 MHz	45	50		%
Load mismatch	V <sub>DD</sub> = 28 V    I <sub>DQ</sub> = 70 mA    P <sub>OUT</sub> = 6 W    f = 945 MHz ALL PHASE ANGLES		10:1			VSWR



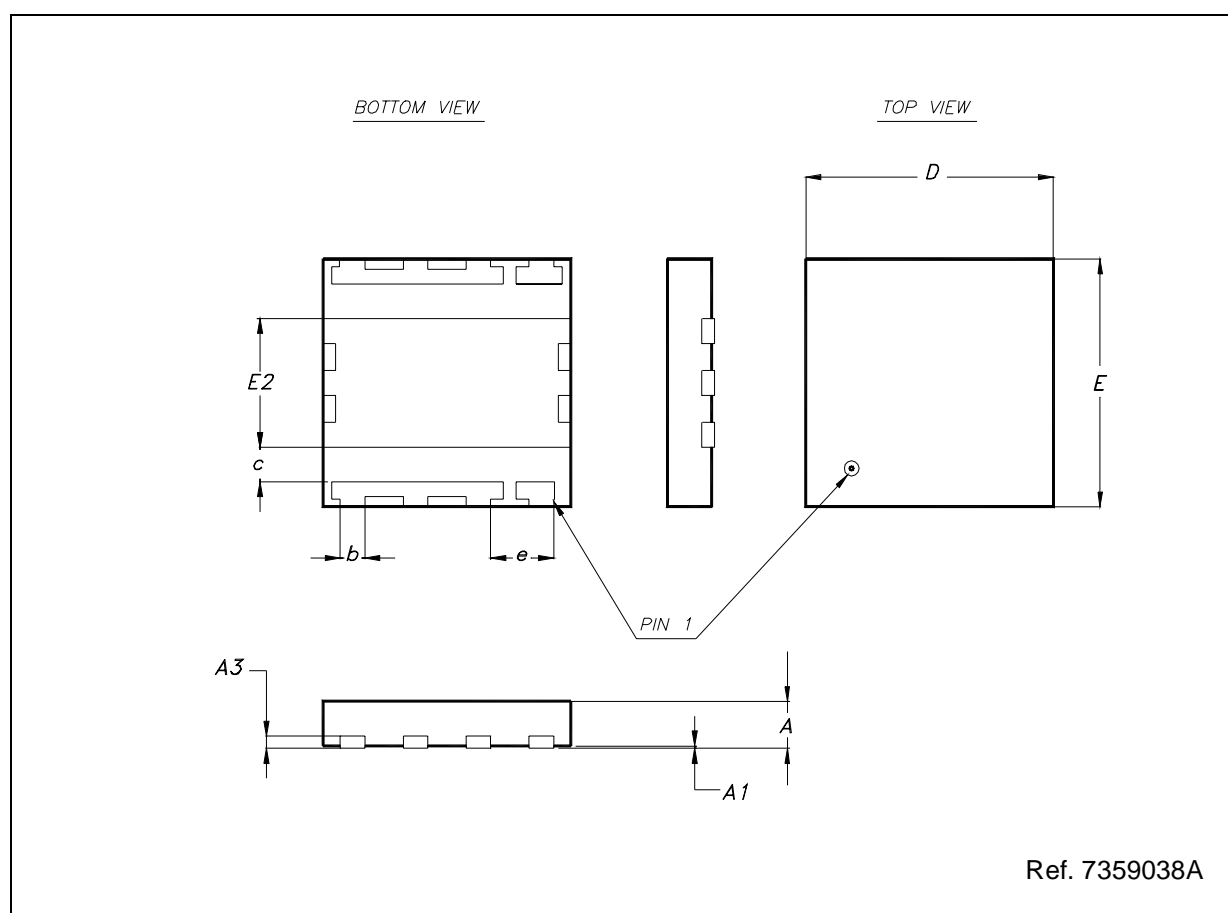
IMPEDANCE DATA

PD57006

FREQ. MHz	Z <sub>IN</sub> (Ω)	Z <sub>DL</sub> (Ω)
925	TBD	TBD
945	TBD	TBD
960	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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