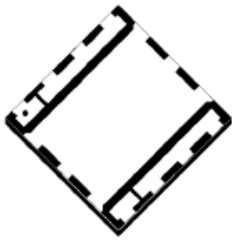
PD57002-01

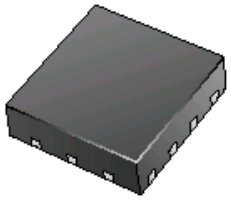
RF POWER TRANSISTORS
The *LdmoST* Plastic FAMILY

TARGET DATA

N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- P_{OUT} = 2 W with 15 dB gain @ 960 MHz / 28 V
- NEW LEADLESS PLASTIC PACKAGE





PowerFLAT™(5x5)

ORDER CODE	BRANDING
PD57002-01	PD57002-01

DESCRIPTION

The PD57002-01 is a common source N-Channel, enhancement-mode lateral Field-Effect RF power transistor designed for broadband commercial and industrial applications at frequencies up to 1000 MHz. The PD57002-01 is designed for high gain and broadband performance operating in common source mode at 28 V. PD57002-01 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 °C)

Symbol	Parameter	Value	Unit
$V_{(BR)DSS}$	Drain-Source Voltage	65	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current	0.25	A
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

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

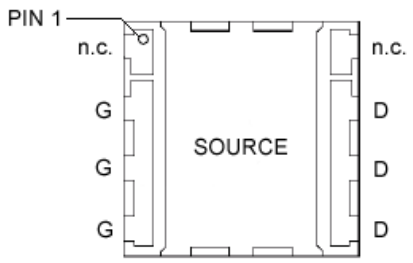
STATIC

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
I_{DSS}	V_{GS} = 0 V	V_{DS} = 28 V				1	µA
I_{GSS}	V_{GS} = 20 V	V_{DS} = 0 V				1	µA
$V_{GS(Q)}$	V_{DS} = 28 V	I_D = 10 mA		2.0		5.0	V
$V_{DS(ON)}$	V_{GS} = 10 V	I_D = 125 mA			0.7	0.9	V
g_{FS}	V_{DS} = 10 V	I_D = 200 mA			--		mho
C_{ISS}	V_{GS} = 0 V	V_{DS} = 28 V	f = 1 MHz		7.1		pF
C_{OSS}	V_{GS} = 0 V	V_{DS} = 28 V	f = 1 MHz		5.8		pF
C_{RSS}	V_{GS} = 0 V	V_{DS} = 28 V	f = 1 MHz		0.1		pF

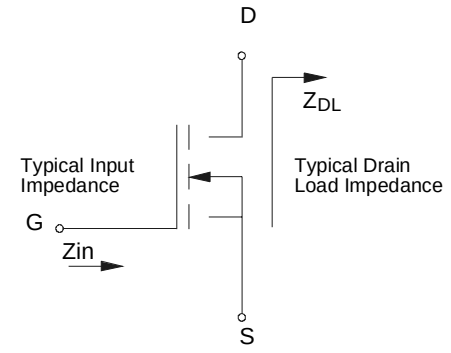
DYNAMIC

Symbol	Test Conditions				Min.	Typ.	Max.	Unit
P_{1dB}	V_{DD} = 28 V	I_{DQ} = 10 mA		f = 960 MHz	2			W
G_P	V_{DD} = 28 V	I_{DQ} = 10 mA	P_{OUT} = 2 W	f = 960 MHz	15			dB
η_D	V_{DD} = 28 V	I_{DQ} = 10 mA	P_{OUT} = 2 W	f = 960 MHz	45			%
Load mismatch	V_{DD} = 28 V ALL PHASE ANGLES	I_{DQ} = 10 mA	P_{OUT} = 2 W	f = 960 MHz	10:1			VSWR

PIN CONNECTION



TOP VIEW



SC13140

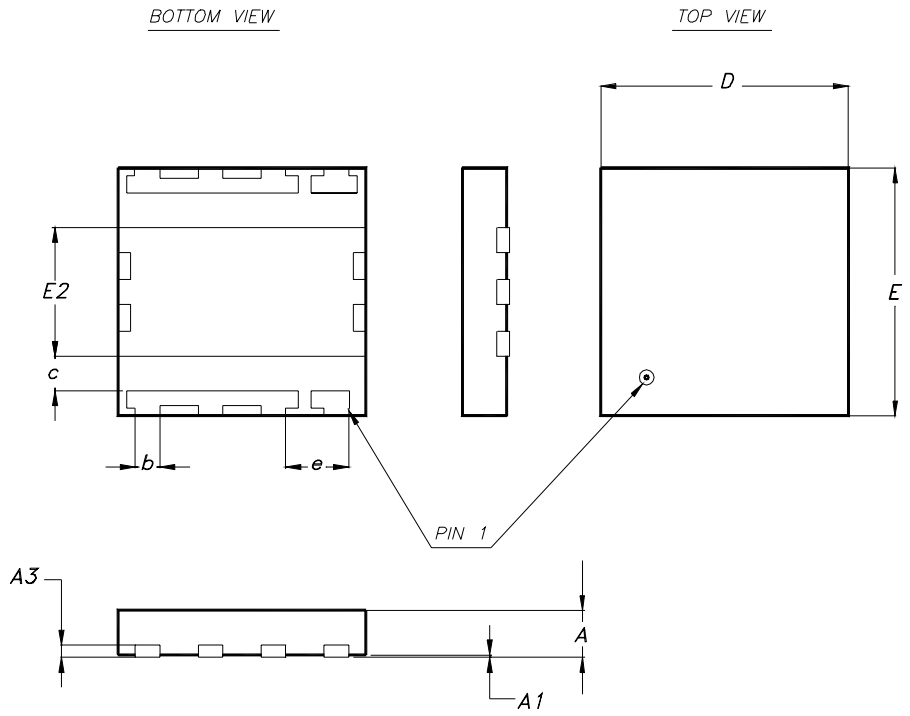
IMPEDANCE DATA

PD57002S

FREQ. MHz	Z_{IN} (Ω)	Z_{DL}(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	



Ref. 7359038A