



PD57018 PD57018S

RF POWER TRANSISTORS The *LdmoST* Plastic FAMILY

TARGET DATA

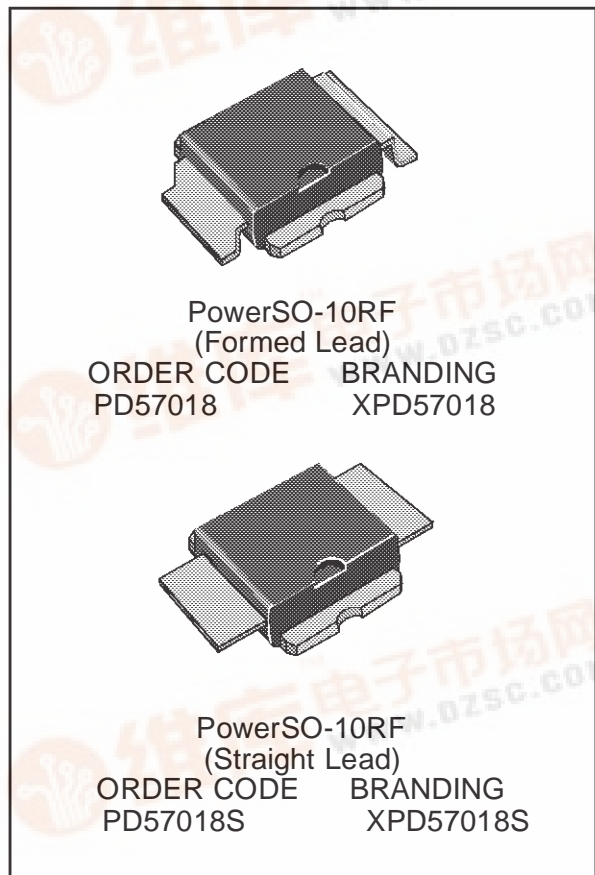
N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- POUT = 18 W with 14 dB gain @ 960 MHz / 28V
- NEW RF PLASTIC PACKAGE

DESCRIPTION

The PD57018 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 28V in common source mode at frequencies of up to 1GHz. PD57018 boasts the excellent gain, linearity and reliability of ST's latest LDMOS technology mounted in the first true SMD plastic RF power package, PowerSO-10RF. PD57018's superior linearity performance makes it an ideal solution for base station applications.

The PowerSO-10 plastic package, designed to offer high reliability, is the first ST JEDEC approved, high power SMD package. It has been specially optimized for RF needs and offers excellent RF performances and ease of assembly.



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	2.5	A
P _{DISS}	Power Dissipation (@ T _c = 70 °C)	31.7	W
T _j	Max. Operating Junction Temperature	165	°C
T _{STG}	Storage Temperature	-65 to 175	°C

THERMAL DATA (T_{case} = 70 °C)

R _{th(j-c)}	Junction-Case Thermal Resistance	3.0	°C/W
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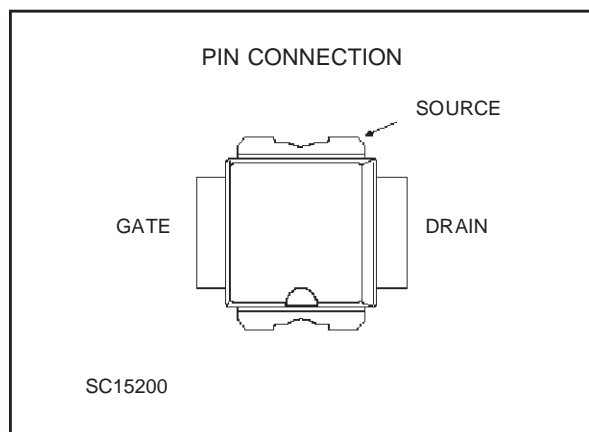
ELECTRICAL SPECIFICATION ($T_{CASE} = 25\text{ }^{\circ}\text{C}$)

STATIC

Symbol	Parameter	Min.	Typ.	Max.	Unit
$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}$ $I_{DS} = 10\text{ mA}$	65			V
I_{DSS}	$V_{GS} = 0\text{ V}$ $V_{DS} = 28\text{ V}$			1	μA
I_{GSS}	$V_{GS} = 20\text{ V}$ $V_{DS} = 0\text{ V}$			1	μA
$V_{GS(Q)}$	$V_{DS} = 28\text{ V}$ $I_D = 50\text{ mA}$	2.0		5.0	V
$V_{DS(ON)}$	$V_{GS} = 10\text{ V}$ $I_D = 1\text{ A}$		0.3		V
g_{FS}	$V_{DS} = 10\text{ V}$ $I_D = 1\text{ A}$				mho
C_{ISS}	$V_{GS} = 0\text{ V}$ $V_{DS} = 28\text{ V}$ $f = 1\text{ MHz}$		36		pF
C_{OSS}	$V_{GS} = 0\text{ V}$ $V_{DS} = 28\text{ V}$ $f = 1\text{ MHz}$		19		pF
C_{RSS}	$V_{GS} = 0\text{ V}$ $V_{DS} = 28\text{ V}$ $f = 1\text{ MHz}$		0.9		pF

DYNAMIC

Symbol	Parameter	Min.	Typ.	Max.	Unit
P_{OUT}	$V_{DD} = 28\text{ V}$ $f = 960\text{ MHz}$ $I_{DQ} = 50\text{ mA}$	18			W
G_{PS}	$V_{DD} = 28\text{ V}$ $f = 960\text{ MHz}$ $P_{OUT} = 18\text{ W}$ $I_{DQ} = 50\text{ mA}$	14	15		dB
η_D	$V_{DD} = 28\text{ V}$ $f = 960\text{ MHz}$ $P_{OUT} = 18\text{ W}$ $I_{DQ} = 50\text{ mA}$	50	60		%
LOAD Mismatch	$V_{DD} = 2\text{ V}$ $f = 960\text{ MHz}$ $P_{OUT} = 18\text{ W}$ $I_{DQ} = 50\text{ mA}$ ALL PHASE ANGLES	10:1			VSWR



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