

**SD57045**

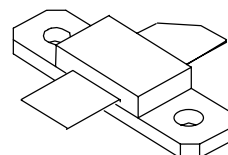
## RF & MICROWAVE TRANSISTORS N-Channel Enhancement-Mode Lateral MOSFETs

**TARGET DATA**

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- $P_{OUT} = 45\text{ W PEP}$  with 13 dB gain @ 945 MHz
- BeO FREE PACKAGE

**DESCRIPTION**

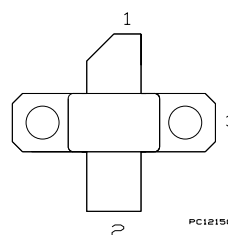
The SD57045 is a common source N-Channel enhancement-mode lateral Field-Effect RF power transistor designed for broadband commercial and industrial applications at frequencies up to 1.0 GHz. The SD57045 is designed for high gain and broadband performance operating in common source mode at 28V. It is ideal for base stations applications requiring high linearity.



**.230 2LFL (M243)**  
epoxy sealed

**ORDER CODE**  
SD57045

**BRANDING**  
SD57045

**PIN CONNECTION**

1. Drain      3. Source  
2. Gate

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

Symbol	Parameter	Value	Unit
$V_{(BR)DSS}$	Drain Source Voltage	65	V
$V_{DGR}$	Drain-Gate Voltage ( $R_{GS} = 1\text{ M}\Omega$ )	65	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Drain Current	5	A
$P_{DISS}$	Power Dissipation (@ $T_c = 70\text{ }^{\circ}\text{C}$ )	93	W
$T_j$	Max. Operating Junction Temperature	200	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature	-65 to 200	$^{\circ}\text{C}$

**THERMAL DATA**

$R_{th(j-c)}$	Junction-Case Thermal Resistance	1.4	$^{\circ}\text{C/W}$
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**ELECTRICAL SPECIFICATION** ( $T_{\text{case}} = 25\text{ }^{\circ}\text{C}$ )**STATIC**

Symbol	Parameter			Min.	Typ.	Max.	Unit
$V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}} = 0\text{V}$	$I_{\text{DS}} = 1\text{ mA}$		65			V
$I_{\text{DSS}}$	$V_{\text{GS}} = 0\text{V}$	$V_{\text{DS}} = 28\text{ V}$				1	$\mu\text{A}$
$I_{\text{GSS}}$	$V_{\text{GS}} = 20\text{V}$	$V_{\text{DS}} = 0\text{ V}$				1	$\mu\text{A}$
$V_{\text{GS(Q)}}$	$V_{\text{DS}} = 28\text{V}$	$I_{\text{D}} = 250\text{ mA}$		2.5		5.0	V
$V_{\text{DS(ON)}}$	$V_{\text{GS}} = 10\text{V}$	$I_{\text{D}} = 3\text{ A}$			0.7		V
$G_{\text{FS}}$	$V_{\text{DS}} = 10\text{V}$	$I_{\text{D}} = 5\text{ A}$			2.7		mho
$C_{\text{ISS}}$	$V_{\text{GS}} = 0\text{V}$	$V_{\text{DS}} = 28\text{ V}$	$f = 1\text{ MHz}$		80		pF
$C_{\text{OSS}}$	$V_{\text{GS}} = 0\text{V}$	$V_{\text{DS}} = 28\text{ V}$	$f = 1\text{ MHz}$		40		pF
$C_{\text{RSS}}$	$V_{\text{GS}} = 0\text{V}$	$V_{\text{DS}} = 28\text{ V}$	$f = 1\text{ MHz}$		3.2		pF

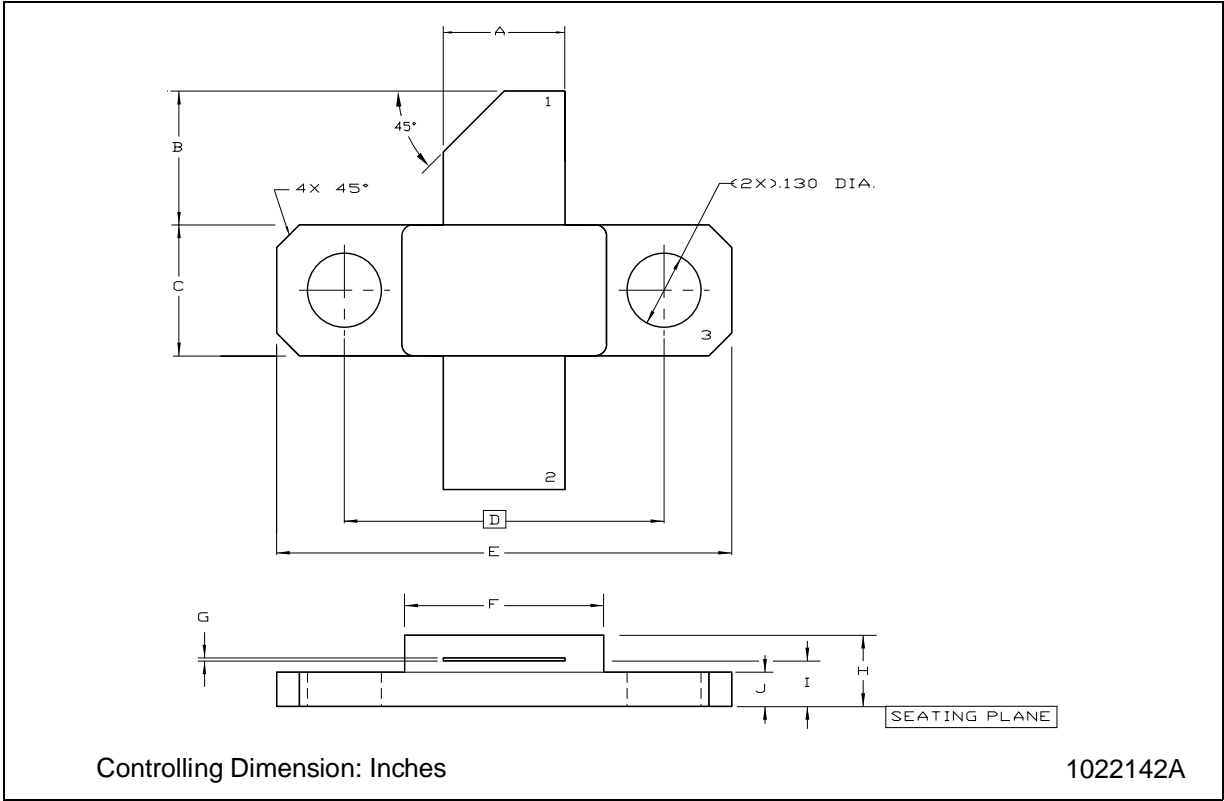
**DYNAMIC**

Symbol	Parameter			Min.	Typ.	Max.	Unit
$P_{\text{OUT}}$	$f = 945\text{ MHz}$	$V_{\text{DD}} = 28\text{V}$	$I_{\text{DQ}} = 250\text{ mA}$	45			W
$\text{IMD}_3$	$V_{\text{DD}} = 28\text{ V}$	$P_{\text{out}} = 45\text{ W PEP}$	$I_{\text{DQ}} = 250\text{ mA}$		-32	-28	dBc
$G_{\text{PS}}$	$V_{\text{DD}} = 28\text{ V}$	$P_{\text{out}} = 45\text{ W PEP}$	$I_{\text{DQ}} = 250\text{ mA}$	13	15		dB
$\eta_{\text{D}}$	$V_{\text{DD}} = 28\text{ V}$	$P_{\text{out}} = 45\text{ W PEP}$	$I_{\text{DQ}} = 250\text{ mA}$	33	40		%
Load Mismatch	$f = 945\text{ MHz}$ ALL PHASE ANGLES	$V_{\text{DD}} = 28\text{ V}$	$P_{\text{out}} = 45\text{ W}$ $I_{\text{DQ}} = 250\text{ mA}$	5:1			VSWR

Note:  $f_1 = 945.0\text{ MHz}$   
 $f_2 = 945.1\text{ MHz}$

M243 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	5.21		5.72	0.205		0.225
B	5.46		6.48	0.215		0.255
C	5.59		6.10	0.220		0.240
D		14.27			0.562	
E	20.07		20.57	0.790		0.810
F	8.89		9.40	0.350		0.370
G	0.10		0.15	0.004		0.006
H	3.18		4.45	0.125		0.175
I	1.78		2.29	0.070		0.090
J	1.27		1.78	0.050		0.070



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