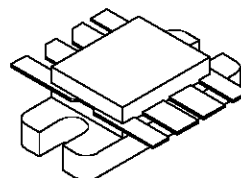


RF & MICROWAVE TRANSISTORS TV/LINEAR APPLICATIONS

- 170 - 230 MHz
- 28 VOLTS
- CLASS AB PUSH PULL
- DESIGNED FOR HIGH POWER LINEAR OPERATION
- HIGH SATURATED POWER CAPABILITY
- GOLD METALLIZATION
- DIFFUSED EMITTER BALLAST RESISTORS
- COMMON EMITTER CONFIGURATION
- $P_{OUT} = 100\text{ W MIN. WITH } 11.0\text{ dB GAIN}$



.400 x .425 8LFL (M168)
epoxy sealed

ORDER CODE

SD1456

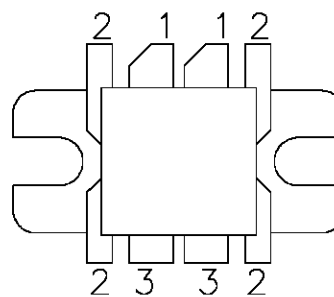
BRANDING

TCC3100

DESCRIPTION

The SD1456 is a gold metallized epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class AB operation in VHF and Band III television transmitters and transposers.

PIN CONNECTION



1. Collector

3. Base

2. Emitter

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	65	V
V_{CEO}	Collector-Emitter Voltage	33	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	16	A
P_{DISS}	Power Dissipation	150	W
T_J	Junction Temperature	+200	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +150	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.2	$^{\circ}\text{C/W}$
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SD1456 (TCC3100)

ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_C = 50\text{mA}$	$I_E = 0\text{mA}$	65	—	—	V
BV_{CER}	$I_C = 50\text{mA}$	$R_{BE} = 15\Omega$	60	—	—	V
BV_{CEO}	$I_C = 50\text{mA}$	$I_B = 0\text{mA}$	33	—	—	V
BV_{EBO}	$I_E = 5\text{mA}$	$I_C = 0\text{mA}$	3.5	—	—	V
h_{FE}	$V_{CE} = 5\text{V}$	$I_C = 500\text{mA}$	20	—	150	—

DYNAMIC (Class AB)

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 225\text{ MHz}$	$V_{CE} = 28\text{ V}$	$I_C = 2 \times 100\text{ mA}$	100	—	—	W
G_P	$P_{OUT} = 100\text{ W}$	$V_{CE} = 28\text{ V}$	$I_C = 2 \times 100\text{ mA}$	11	—	—	dB
η_C	$P_{OUT} = 100\text{ W}$	$V_{CE} = 28\text{ V}$	$I_C = 2 \times 100\text{ mA}$	70	—	—	%
C_{OB}	$f = 1\text{ MHz}$	$V_{CB} = 28\text{ V}$		—	60	—	pF

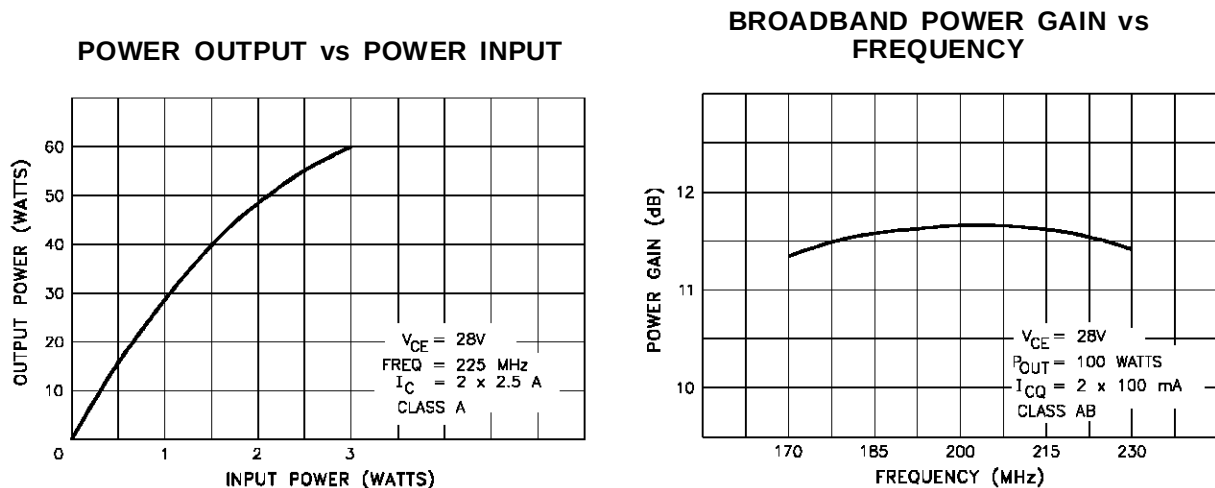
DYNAMIC (Class A)

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}^*	$f = 225\text{ MHz}$	$V_{CE} = 28\text{ V}$	$I_C = 2 \times 2.5\text{ A}$	28	32	—	W
G_P^*	$P_{IN} = 1.1\text{ W}$	$V_{CE} = 28\text{ V}$	$I_C = 2 \times 2.5\text{ A}$	14	15	—	dB
IMD_3^*	$P_{IN} = 1.1\text{ W}$	$V_{CE} = 28\text{ V}$	$P_{REF} = 28\text{ W}$	—	-51	—	dB

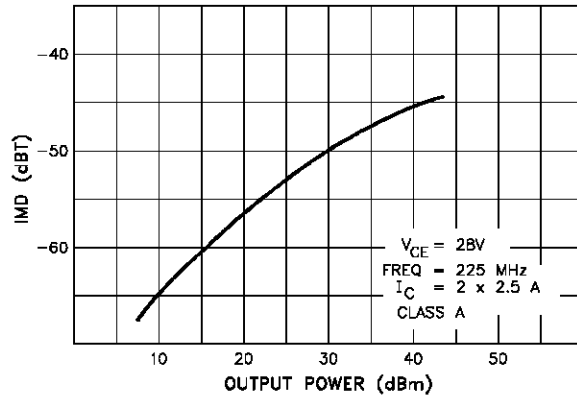
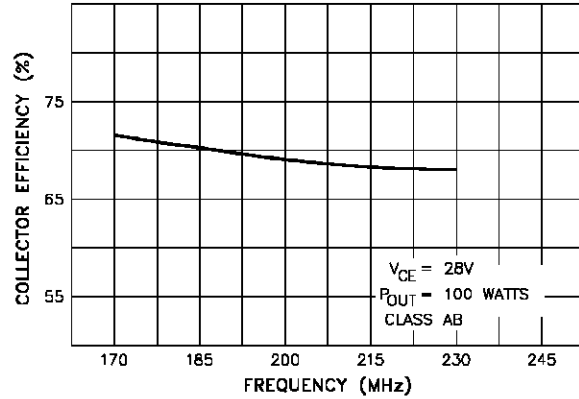
Note: * Class A Performance Characteristics Indicate Capability but are not Tested.

IMD3 - 3 Tone Measurement; -8, -7, -16dB relative to P_{REF}

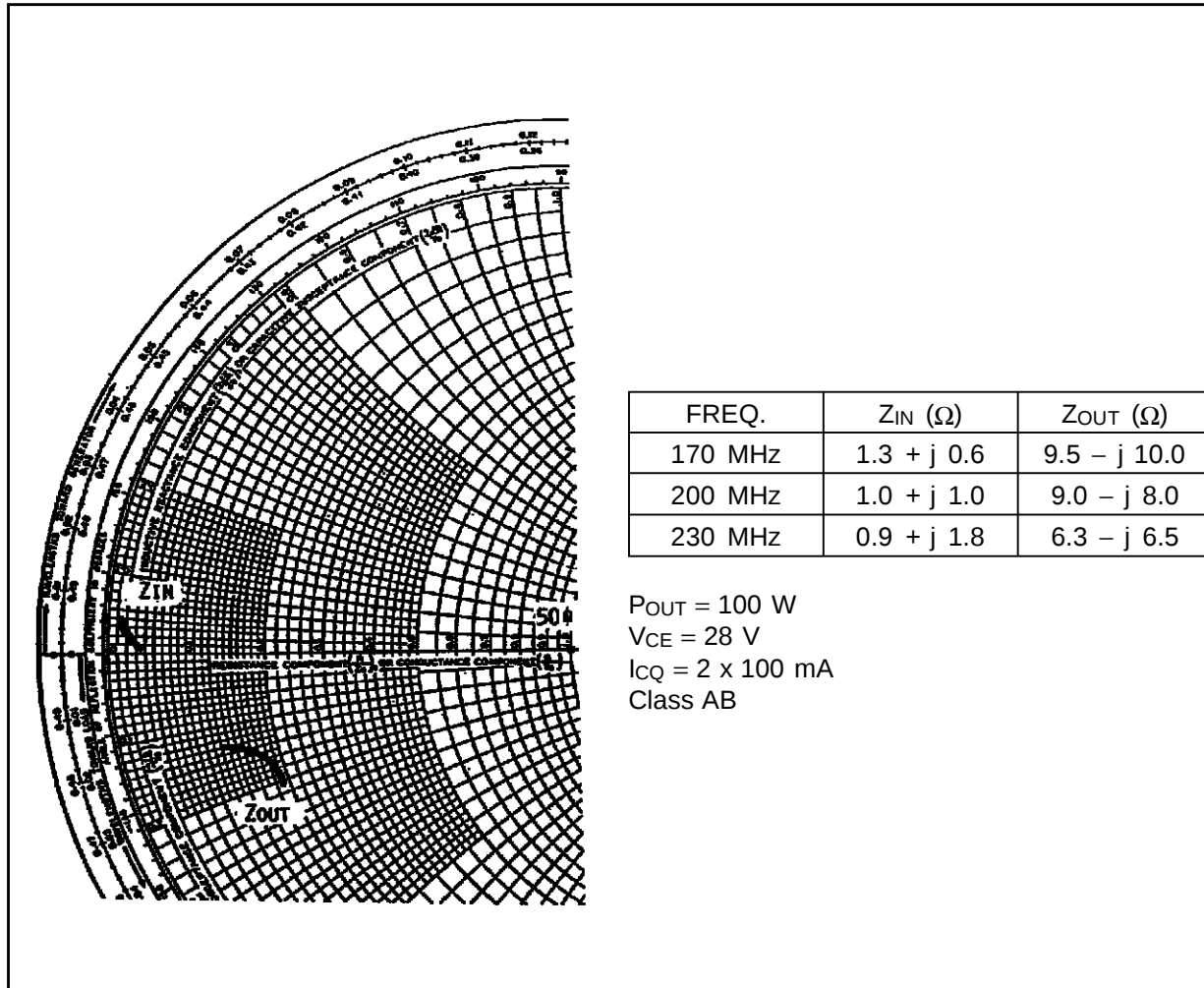
TYPICAL PERFORMANCE



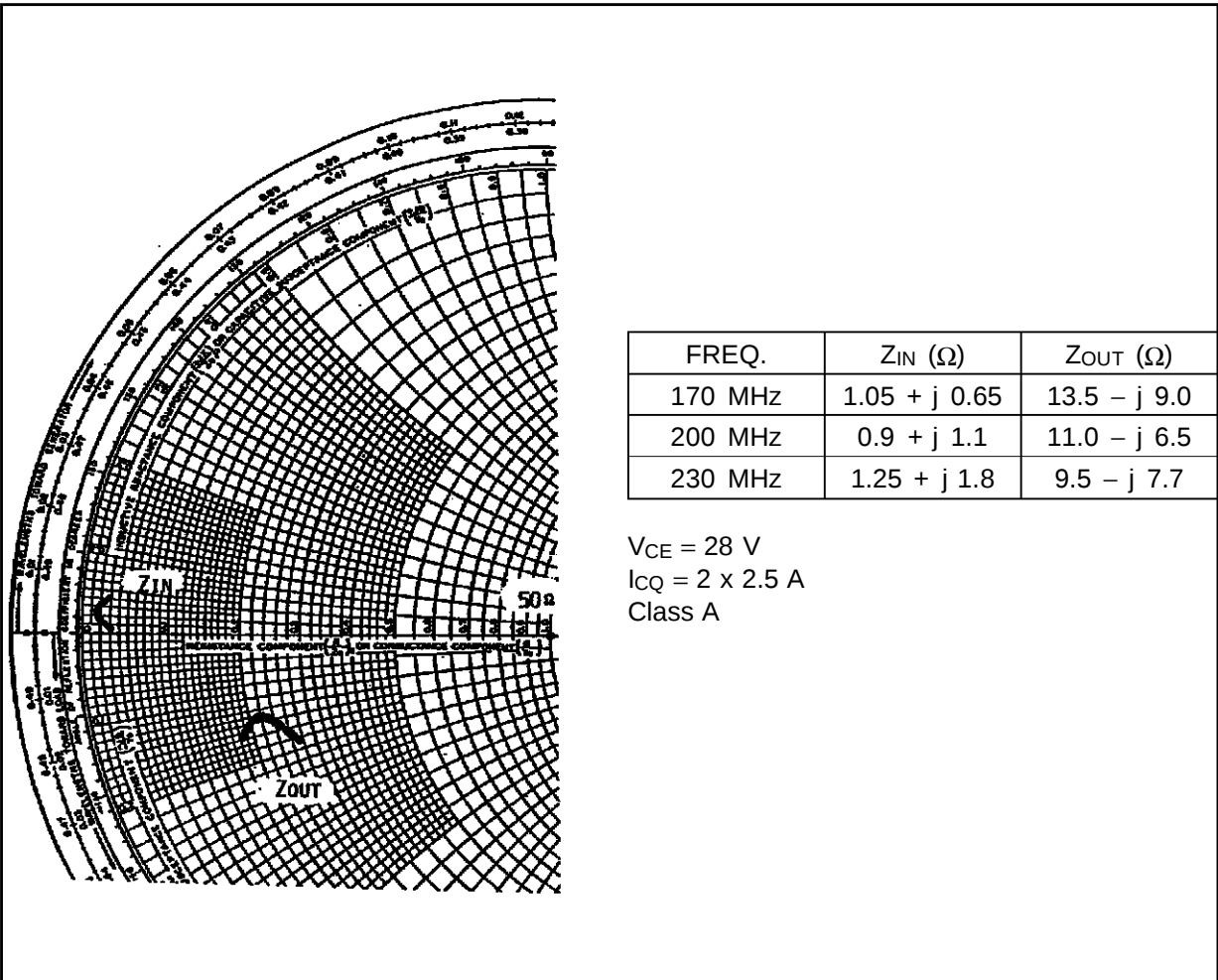
TYPICAL PERFORMANCE (cont'd)

INTERMODULATION DISTORTION vs
POWER OUTPUTCOLLECTOR EFFICIENCY vs
FREQUENCY

IMPEDANCE DATA

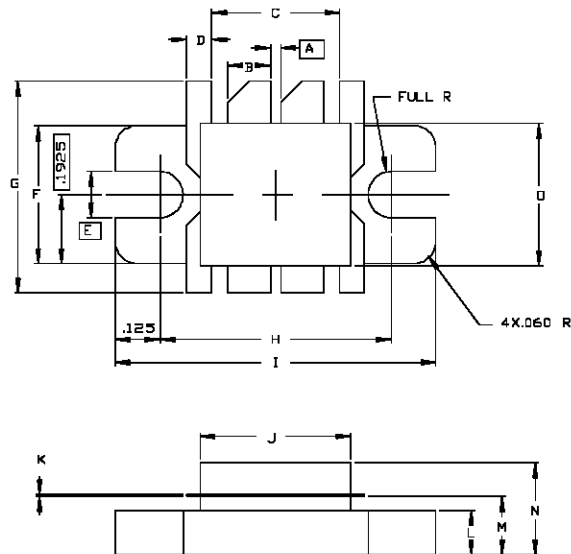


IMPEDANCE DATA



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0168



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.030/0,76		K	.003/0,08	.007/0,18
B	.115/2,92	.125/3,18	L	.120/3,05	.130/3,30
C	.360/9,14		M	.159/4,04	.175/4,45
D	.065/1,65	.075/1,91	N		.280/7,11
E	.130/3,30		□	.395/10,03	.405/10,29
F	.380/9,65	.390/9,91			
G	.735/18,67	.765/19,43			
H	.645/16,38	.655/16,64			
I	.895/22,73	.905/22,99			
J	.420/10,67	.430/10,92			

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