SGS-THOMSON MICROELECTRONICS

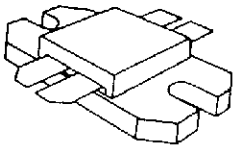
SD4100

PRODUCT DEVELOPMENT DATA SHEET

This data sheet contains the design criteria and target specifications for a product which is currently under development by SGS-THOMSON. The design criteria and specifications of this item could change prior to introduction and SGS-THOMSON assumes no liability for use of information contained herein.

RF & MICROWAVE TRANSISTORS TV/LINEAR APPLICATIONS

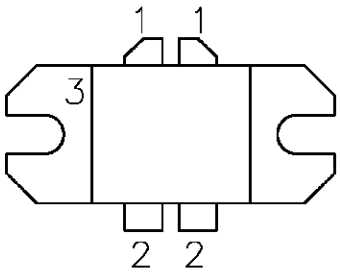
- 470 - 860 MHz
- 28 VOLTS
- CLASS AB PUSH PULL
- DESIGNED FOR HIGH POWER LINEAR OPERATION
- HIGH SATURATED POWER CAPABILITY
- INTERNAL INPUT/OUTPUT MATCHING NETWORKS PROVIDE HIGH BALANCED IMPEDANCES FOR SIMPLIFIED CIRCUIT DESIGN AND WIDE INSTANTANEOUS BANDWIDTH
- GAIN = 8.5 dB MIN.
- P_{OUT} = 100 W MIN. CW
- P_{OUT} = 125 W PEAK SYNC.



.437 x .450 4LFL (M173)
epoxy sealed

ORDER CODE	BRANDING
SD4100	SD4100

PIN CONNECTION



1. Collector
2. Base
3. Emitter

DESCRIPTION

The SD4100 is a gold metallized epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class AB operation in UHF and Band IV, V television transmitters and transposers.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	65	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	16	A
P_{DISS}	Power Dissipation (+25°C)	220	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	– 65 to +150	°C

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	0.8	°C/W

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 40 mA	I_E = 0 mA	65	—	—	V
BV_{CEO}	I_C = 80 mA	I_B = 0 mA	30	—	—	V
BV_{CER}	I_C = 120 mA	R_{BE} = 75 Ω	40	—	—	V
BV_{EBO}	I_E = 20 mA	I_C = 0 mA	3.5	—	—	V
I_{CEO}	V_{CE} = 28 V	I_B = 0 mA	—	—	10	mA
h_{FE}	V_{CE} = 5 V	I_C = 4 A	25	—	120	—

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
C_{OB}	f = 1 MHz V_{CB} = 28 V (each side) C_{OB} is not measurable due to Internal Output Matching Network	—	50	—	pF

DYNAMIC (CW)

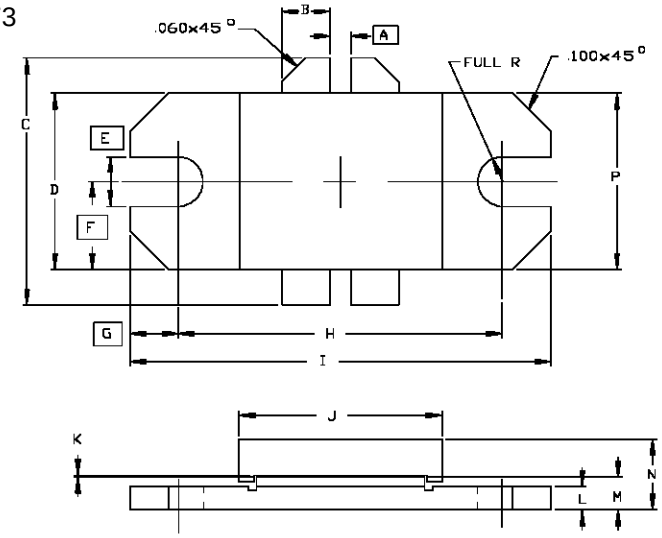
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{1dB}	f = 860 MHz P_{REF} = 25 W V_{CC} = 28 V I_{CQ} = 200 mA	100	—	—	W
G_P	f = 860 MHz P_{OUT} = 100 W V_{CC} = 28 V I_{CQ} = 200 mA	8.5	—	—	dB
η_c	f = 860 MHz P_{OUT} = 100 W V_{CC} = 28 V I_{CQ} = 200 mA	55	—	—	%

DYNAMIC (Video) (Standard Black Level)

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
G_P	f = 860 MHz P_{OUT} = 125 W V_{CC} = 28 V I_{CQ} = 200 mA	8.5	—	—	dB
P_{1dB}	f = 860 MHz P_{REF} = 25 W V_{CC} = 28 V I_{CQ} = 200 mA	125	—	—	W
P_{1dB}	f = 860 MHz P_{REF} = 25 W V_{CC} = 32 V I_{CQ} = 100 mA	150	—	—	W

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0173



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.055/1,40	
B	.120/3,05	.130/3,30
C		.785/19,94
D	.455/11,56	.465/11,81
E	.130/3,30	
F	.230/5,84	
G	.128/3,25	
H	.838/21,28	.850/21,59
I	1.095/27,81	1.105/28,07
J	.525/13,34	.535/13,59

CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
K	.002/0,05	.006/0,15
L	.055/1,40	.065/1,65
M	.080/2,03	.095/2,41
N		.195/4,95
P	.455/11,56	.468/11,89

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