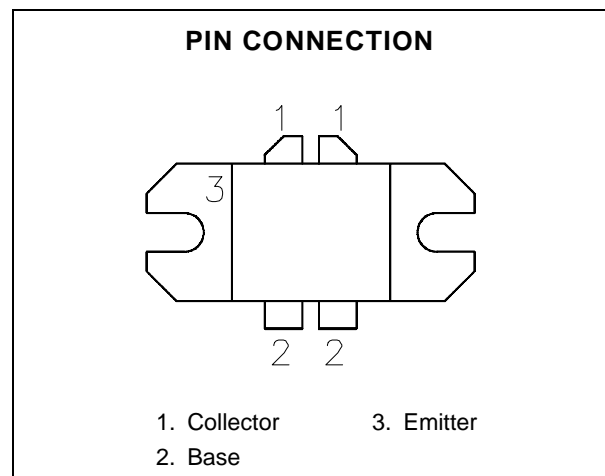
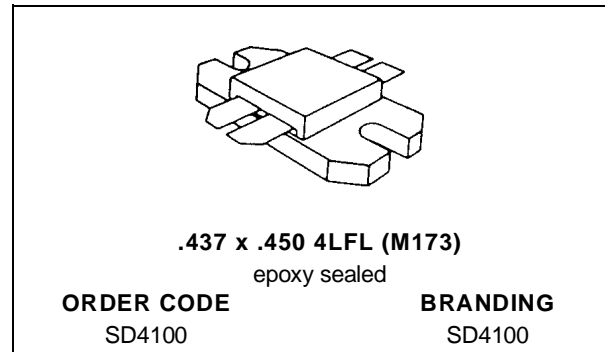


PRODUCT DEVELOPMENT DATA SHEET

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.


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
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SD4100**ELECTRICAL SPECIFICATIONS** ($T_{case} = 25^{\circ}C$)

STATIC

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

DYNAMIC

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

DYNAMIC (CW)

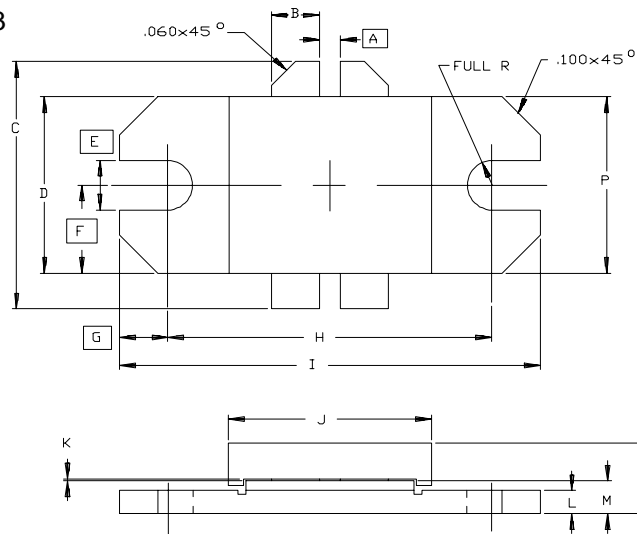
Symbol	Test Conditions				Value			Unit
					Min.	Typ.	Max.	
P_{1dB}	$f = 860\text{ MHz}$	$P_{REF} = 25\text{ W}$	$V_{CC} = 28\text{ V}$	$I_{CQ} = 200\text{ mA}$	100	—	—	W
G_P	$f = 860\text{ MHz}$	$P_{OUT} = 100\text{ W}$	$V_{CC} = 28\text{ V}$	$I_{CQ} = 200\text{ mA}$	8.5	—	—	dB
η_c	$f = 860\text{ MHz}$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

DYNAMIC (Video) (Standard Black Level)

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

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0173



SGS-THOMSON MICROELECTRONICS		CONT'D			
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.055/1,40		K	.002/0,05	.006/0,15
B	.120/3,05	.130/3,30	L	.055/1,40	.065/1,65
C		.785/19,94	M	.080/2,03	.095/2,41
D	.455/11,56	.465/11,81	N		.195/4,95
E	.130/3,30		P	.455/11,56	.468/11,89
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			

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