



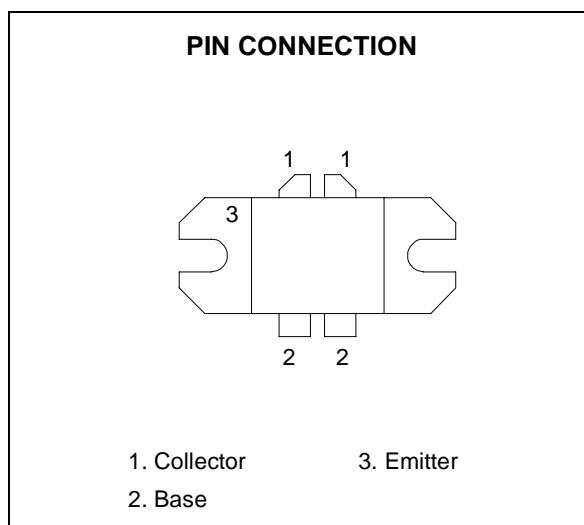
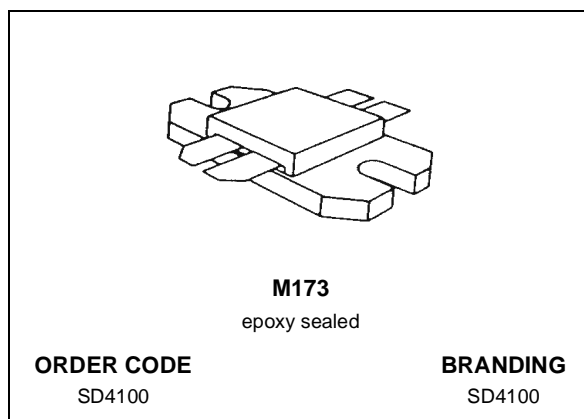
SD4100

RF POWER TRANSISTORS UHF 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.
- $P_{OUT} = 100\text{ W MIN. CW}$
- $P_{OUT} = 125\text{ W PEAK SYNC}$

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 ($T_{CASE} = 25\text{ }^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	65	V
V_{CEO}	Collector-Emitter Voltage	32	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	16	A
P_{DISS}	Power Dissipation	220	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	0.8	$^{\circ}\text{C/W}$
---------------	----------------------------------	-----	----------------------

ELECTRICAL SPECIFICATION ($T_{CASE} = 25^{\circ}C$)**STATIC**

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
BV_{CBO}	$I_C = 40\text{ mA}$	$I_E = 0\text{ mA}$	65	---	---	V
BV_{CEO}	$I_C = 80\text{ mA}$	$I_B = 0\text{ mA}$	32	---	---	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	---

REF.1017623C

DYNAMIC

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

DYNAMIC (CW)

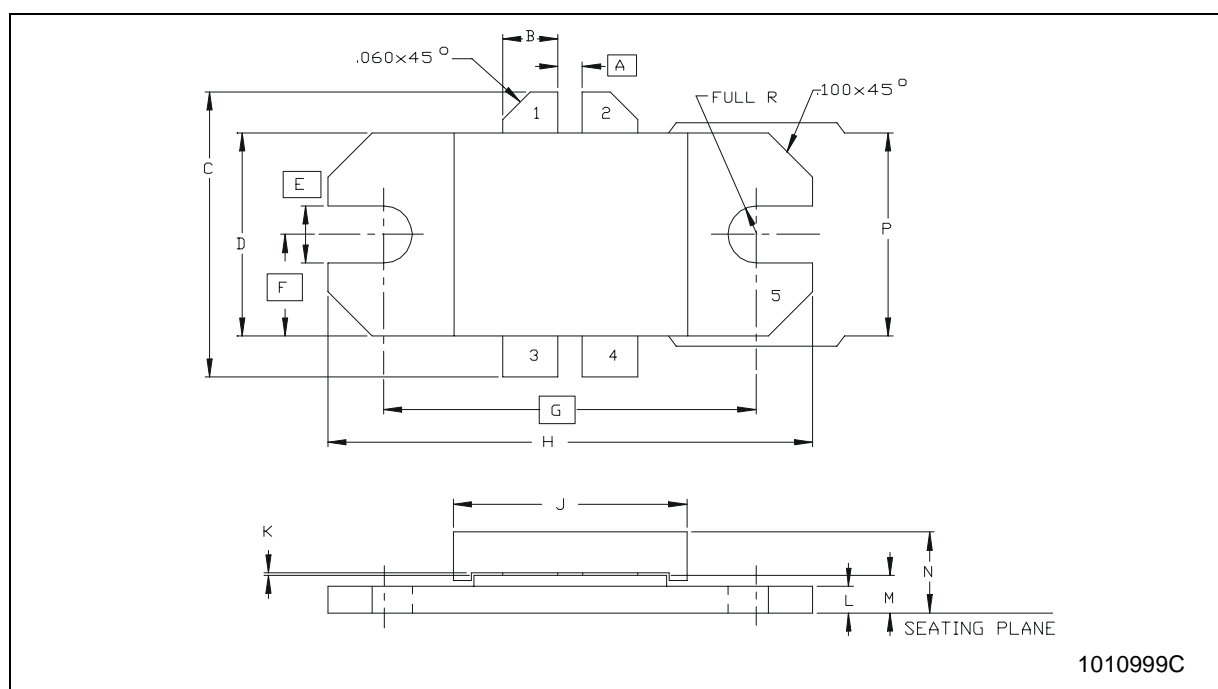
Symbol	Test Conditions				Min.	Typ.	Max.	Unit
P_{1dB}	$f = 860\text{ MHz}$	$P_{REF} = 25\text{ W}$	$V_{CC} = 28\text{ V}$	$I_{CQ} = 200\text{ mA}$	100	---	---	W
G_P	$f = 860\text{ MHz}$	$P_{OUT} = 100\text{ W}$	$V_{CC} = 28\text{ V}$	$I_{CQ} = 200\text{ mA}$	8.5	---	---	dB
η_C	$f = 860\text{ MHz}$	$P_{OUT} = 100\text{ W}$	$V_{CC} = 28\text{ V}$	$I_{CQ} = 200\text{ mA}$	55	---	---	%
Load Mismatch	$f = 860\text{ MHz}$	$P_{OUT} = 100\text{ W}$ ALL PHASE ANGLES	$V_{CC} = 28\text{ V}$	$I_{CQ} = 200\text{ mA}$	3:1	---	---	VSWR

DYNAMIC (VIDEO - STANDARD BLACK LEVEL)

Symbol	Test Conditions				Min.	Typ.	Max.	Unit
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

M173 (.438 X .450 4/L N/HERM W/FLG) MECHANICAL DATA

DIM.	mm			Inch		
	MIN.	TYP.	MAX	MIN.	TYP.	MAX
A		1.40			.055	
B	3.05		3.30	.120		.130
C			19.94			.785
D	11.56		11.81	.455		.465
E		3.30			.130	
F		5.84			.230	
G		21.44			.844	
H	27.81		28.07	1.095		1.105
J	13.34		13.59	.525		.535
K	0.05		0.13	.002		.005
L	1.40		1.65	.055		.065
M	2.03		2.41	.080		.095
N			4.95			.195
P	11.30		11.56	.445		.455



Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is registered trademark of STMicroelectronics,
2000 STMicroelectronics - All Rights Reserved

All other names are the property of their respective owners.

STMicroelectronics GROUP OF COMPANIES
Australia - Brazil - China - Finland - France - Germany - Hong Kong - India - Italy - Japan - Malaysia - Malta - Morocco -
Singapore - Spain - Sweden - Switzerland - United Kingdom - U.S.A.

<http://www.st.com>