



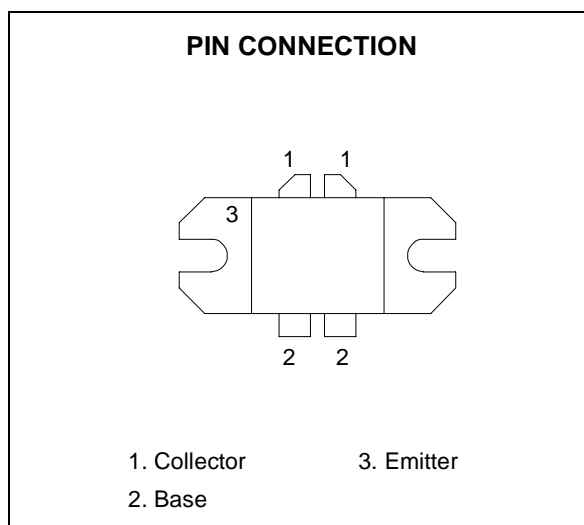
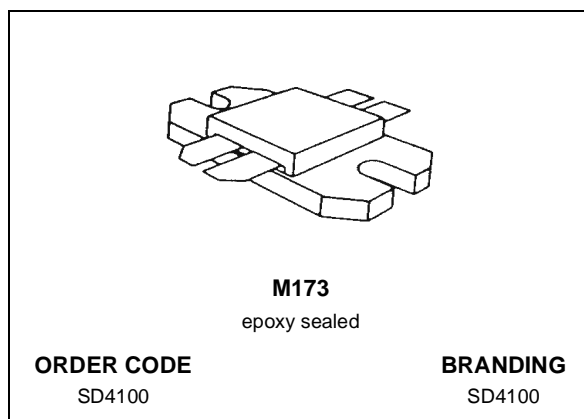
## SD4100

### 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	$^{\circ}\text{C/W}$
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**ELECTRICAL SPECIFICATION** ( $T_{CASE} = 25\text{ }^{\circ}\text{C}$ )**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
$BV_{CER}$	$I_C = 120\text{ mA}$	$R_{BE} = 75\text{ }\Omega$	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)**

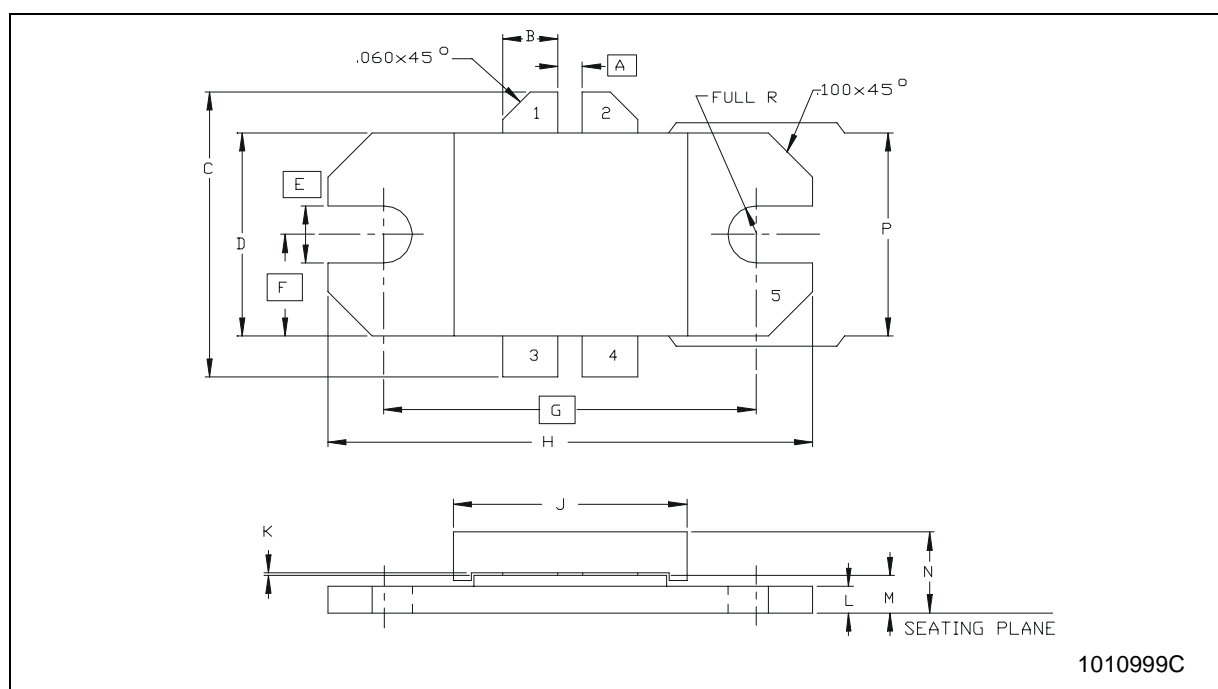
Symbol	Test Conditions				Min.	Typ.	Max.	Unit
$P_{1dB}$	$f = 860\text{ MHz}$	$P_{REF} = 25\text{ W}$	$V_{CC} = 28\text{ V}$	$I_{CQ} = 200\text{ mA}$	100	---	---	W
$G_P$	$f = 860\text{ MHz}$	$P_{OUT} = 100\text{ W}$	$V_{CC} = 28\text{ V}$	$I_{CQ} = 200\text{ mA}$	8.5	---	---	dB
$\eta_C$	$f = 860\text{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



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