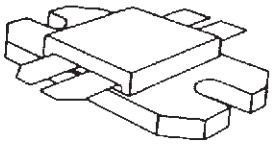
SD4100

RF POWER TRANSISTORS
UHF TV/LINEAR APPLICATIONS

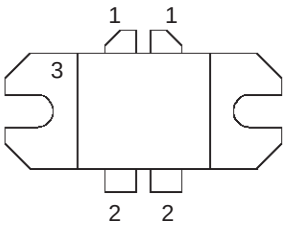
- 470 - 860 MHz
- 28 VOLTS
- CLASS AB PUSH PULL
- DESIGNED FOR HIGH POWER LINEAR OPERATION
- HIGH SATURATED POWER CAPABILITY
- INTERNAL INPUT/OUTPUT MATCHING NETWORKS PROVIDE HIGH BALANCED IMPEDANCES FOR SIMPLIFIED CIRCUIT DESIGN AND WIDE INSTANTANEOUS BANDWIDTH
- GAIN = 8.5 dB MIN.
- P_{OUT} = 100 W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



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 ^{0}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	^{0}C
T_{STG}	Storage Temperature	-65 to +150	^{0}C

THERMAL DATA

$R_{th(j-c)}$	Junction-Case Thermal Resistance	0.8	^{0}C/W

ELECTRICAL SPECIFICATION (T_{CASE} = 25 °C)

STATIC

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

REF.1017623C

DYNAMIC

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

DYNAMIC (CW)

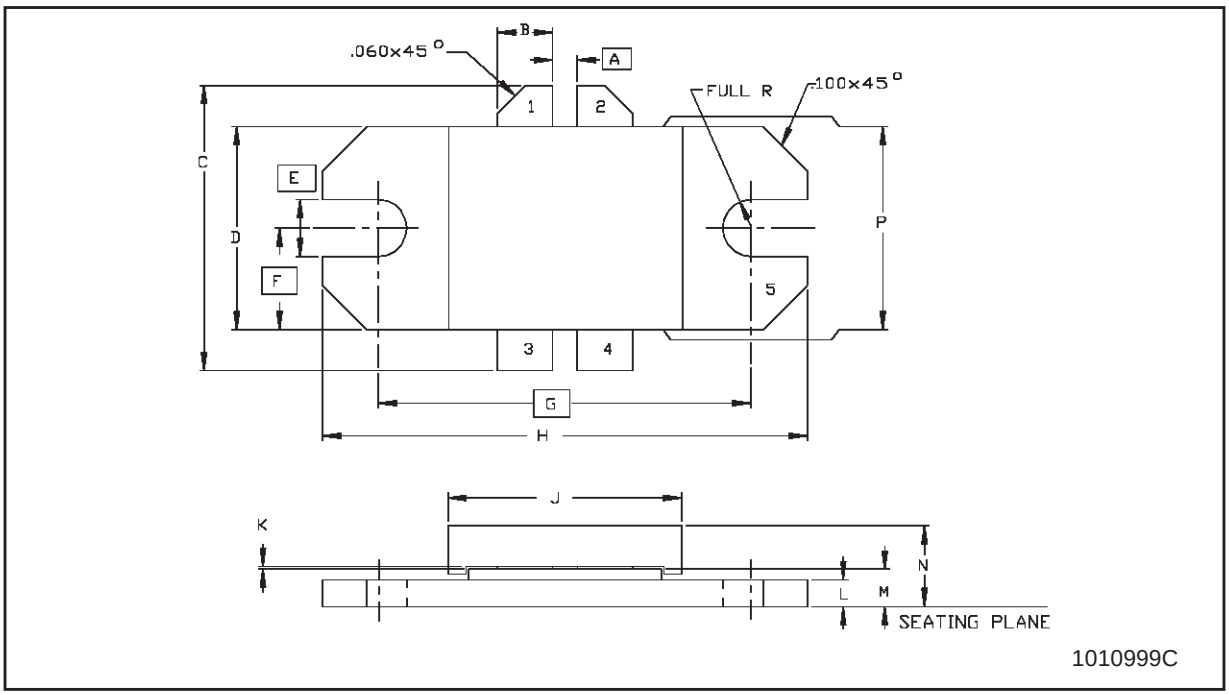
Symbol	Test Conditions				Min.	Typ.	Max.	Unit
P_{1dB}	f = 860 MHz	P_{REF} = 25 W	V_{CC} = 28 V	I_{CQ} = 200 mA	100	---	---	W
G_P	f = 860 MHz	P_{OUT} = 100 W	V_{CC} = 28 V	I_{CQ} = 200 mA	8.5	---	---	dB
η_C	f = 860 MHz	P_{OUT} = 100 W	V_{CC} = 28 V	I_{CQ} = 200 mA	55	---	---	%
Load Mismatch	f = 860 MHz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

DYNAMIC (VIDEO - STANDARD BLACK LEVEL)

Symbol	Test Conditions				Min.	Typ.	Max.	Unit
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

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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