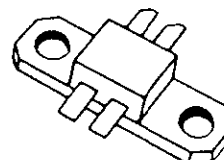


RF & MICROWAVE TRANSISTORS TV LINEAR APPLICATIONS

- 470 - 860 MHz
- 25 VOLTS
- CLASS A PUSH PULL
- DESIGNED FOR HIGH POWER LINEAR OPERATION
- HIGH SATURATED POWER CAPABILITY
- GOLD METALLIZATION
- DIFFUSED EMITTER BALLAST RESISTORS
- COMMON EMITTER CONFIGURATION
- INTERNAL INPUT MATCHING
- $P_{OUT} = 14.0 \text{ W MIN. WITH } 8.5 \text{ dB GAIN}$



.250 x .320 4LFL (M156)
epoxy sealed

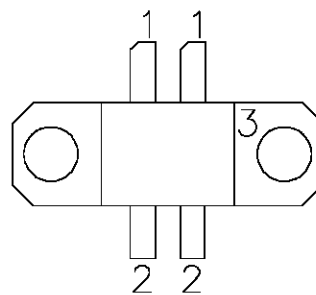
ORDER CODE
SD1732

BRANDING
TDS595

DESCRIPTION

The SD1732 is a gold metallized epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class A operation in UHF and Band IV, V television transmitters and transposers.

PIN CONNECTION



1. Collector 3. Emitter
2. Base

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	2 x 2.6	A
P_{DISS}	Power Dissipation	65	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	2.5	$^{\circ}\text{C/W}$
---------------	----------------------------------	-----	----------------------

SD1732 (TDS595)

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

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 20\text{mA}$	$I_{\text{E}} = 0\text{mA}$	45	—	—	V
BV_{CEO}	$I_{\text{C}} = 40\text{mA}$	$I_{\text{B}} = 0\text{mA}$	25	—	—	V
BV_{EBO}	$I_{\text{E}} = 5\text{mA}$	$I_{\text{C}} = 0\text{mA}$	3.0	—	—	V
h_{FE}	$V_{\text{CE}} = 20\text{V}$	$I_{\text{C}} = 0.5\text{A}$	10	—	—	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 845\text{ MHz}$	$V_{\text{CE}} = 25\text{ V}$	$I_{\text{CQ}} = 2 \times 850\text{ mA}$	14	—	—	W
G_{P}	$P_{\text{OUT}} = 14\text{ W}$	$V_{\text{CE}} = 25\text{ V}$	$I_{\text{CQ}} = 2 \times 850\text{ mA}$	8.5	—	—	dB
IMD_3^*	$P_{\text{OUT}} = 14\text{ W}$	$V_{\text{CE}} = 25\text{ V}$	$I_{\text{CQ}} = 2 \times 850\text{ mA}$	—	-47	—	dBc
CMD^{**}	$P_{\text{OUT}} = 14\text{ W}$	$V_{\text{CE}} = 25\text{ V}$	$I_{\text{CQ}} = 2 \times 850\text{ mA}$	—	20	—	%
C_{OB}	$f = 1\text{ MHz}$	$V_{\text{CB}} = 25\text{ V}$		—	—	20	pF

Note: *IMD 3 Tone Testing

Vision Carrier -8 dB ref

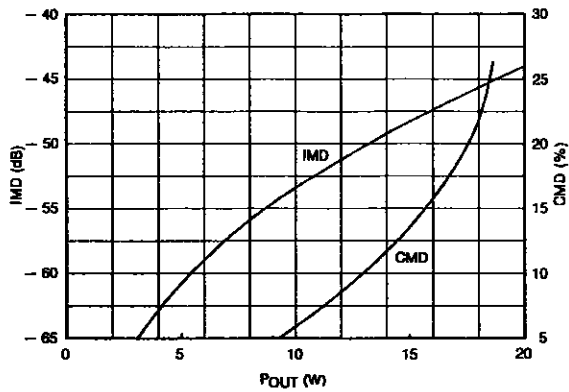
Sound Carrier -7 dB ref

Sideband Carrier -16 dB ref

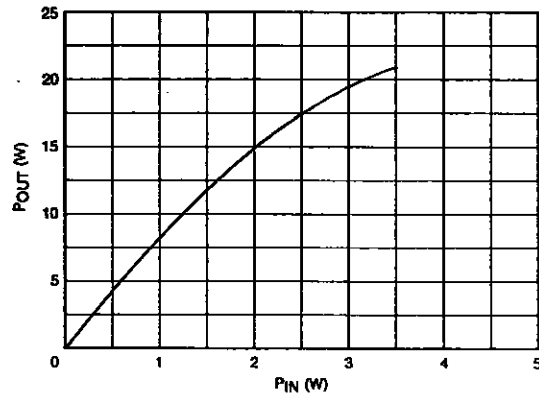
** CMD: Cross Modulation Distortion of the Voltage Variation (%) of Sound Carrier When Vision Carrier is Switched from 0 to -20 dB

TYPICAL PERFORMANCE

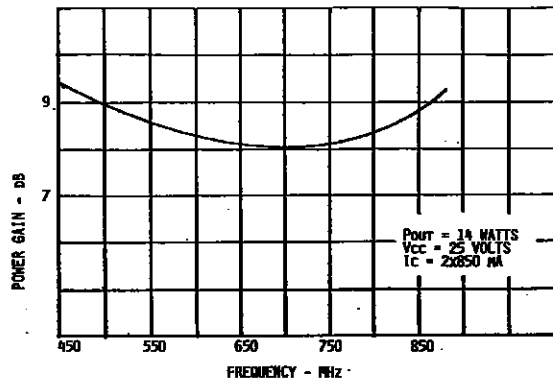
INTERMODULATION DISTORTION & CROSS MODULATION DISTORTION vs POWER OUTPUT



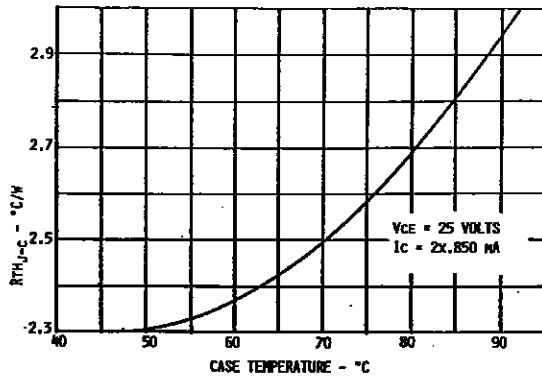
POWER OUTPUT vs POWER INPUT



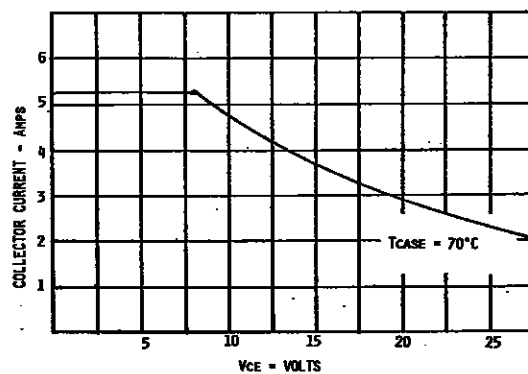
BROADBAND POWER GAIN vs FREQUENCY



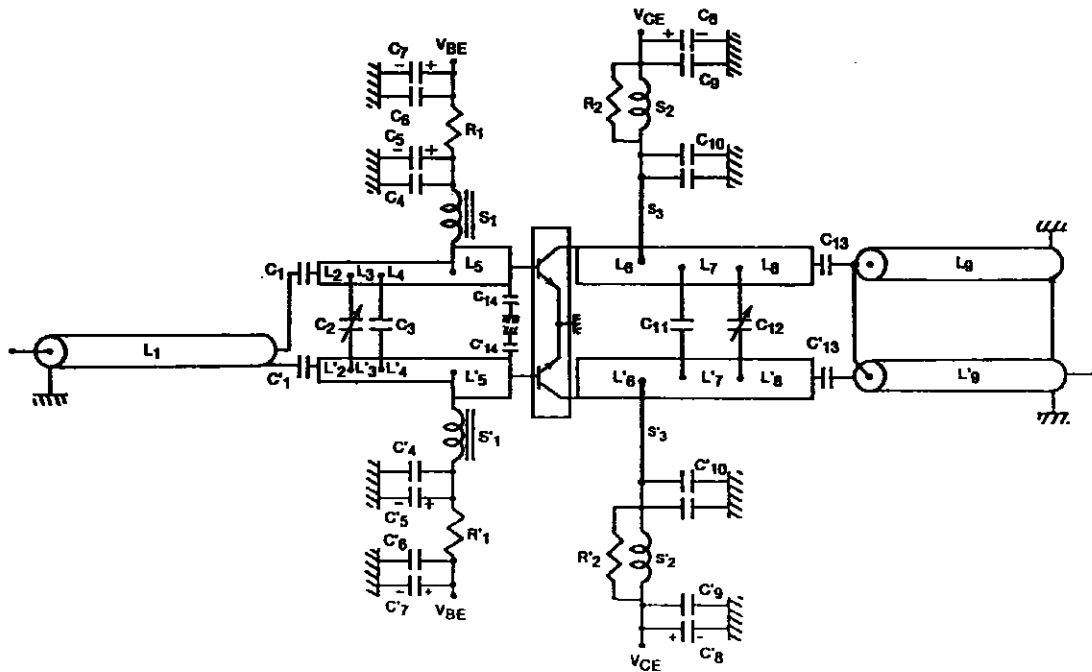
THERMAL RESISTANCE vs CASE TEMPERATURE



SAFE OPERATING AREA



TEST CIRCUIT



C1, C'1 : 68pF, ATC 100A
 C13, C'13 : 68pF, ATC 100A
 C2 : 4.5pF Adjustable Johanson
 C3 : 4.7pF, ATC 100A
 C4, C'4, C6, C'6, C9, C'9 : 100pF, ATC 100A + 1nF LCC Chip + 10nF LCC Chip
 C5, C'5 : 4.7μF, 25V, Tantalum Capacitor
 C7, C'7 : 10μF, 25V, Tantalum Capacitor
 C8, C'8 : 22μF, 35V, Tantalum Capacitor
 C11 : 4.7pF, ATC 100A
 C12 : 8pF Adjustable Johanson
 C14, C'14 : 22pF, ATC 100A

L1, L9, L'9 : 50Ω Coaxial Wire Diameter 2.2mm, Length 29mm on 70Ω Transmission Line
 L2, L'2 : 50Ω Printed Transmission Line Length 4mm

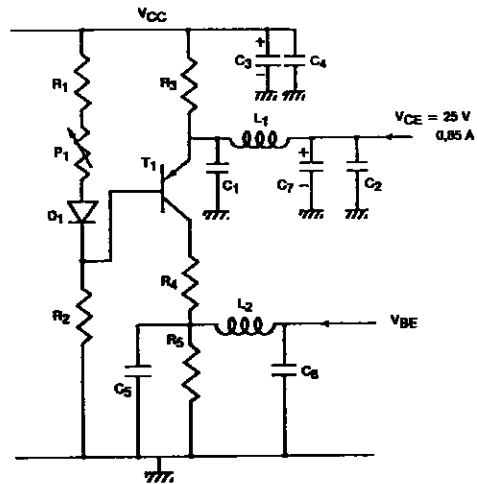
L3, L'3 : 50Ω Printed Transmission Line Length 3mm
 L4, L'4 : 50Ω Printed Transmission Line Length 9.5mm
 L5, L'5 : 39Ω Printed Transmission Line Length 7mm
 L6, L'6 : 39Ω Printed Transmission Line Length 15mm
 L7, L'7 : 39Ω Printed Transmission Line Length 8mm
 L8, L'8 : 39Ω Printed Transmission Line Length 10mm

R1, R'1 : 4.7Ω, 1/2W
 R2, R'2 : 1207Ω, 1/2W

S1, S'1 : 470nH Molded
 S2, S'2 : 5 Turns, Diameter Wire 0.5mm on 3mm I.D.
 S3, S'3 : Diameter Wire 1.2mm, Length 12mm

Substrate: Teflon Glass 30Mils, Er = 2.55

SUPPLY CIRCUIT - CLASS A ADJUSTABLE (per side)



C1, C2, C4,
C5, C6 : 1nF LCC Chip + 10nF LCC Chip
C3 : 100 μ F Sprague
C7 : 10 μ F Sprague

D1 : 1N 4001

L1, L2 : 5 Turns, 0.5mmWire on 3mm Internal Diameter

P1 : 1k Ω

R1 : 56 Ω , 1/2W

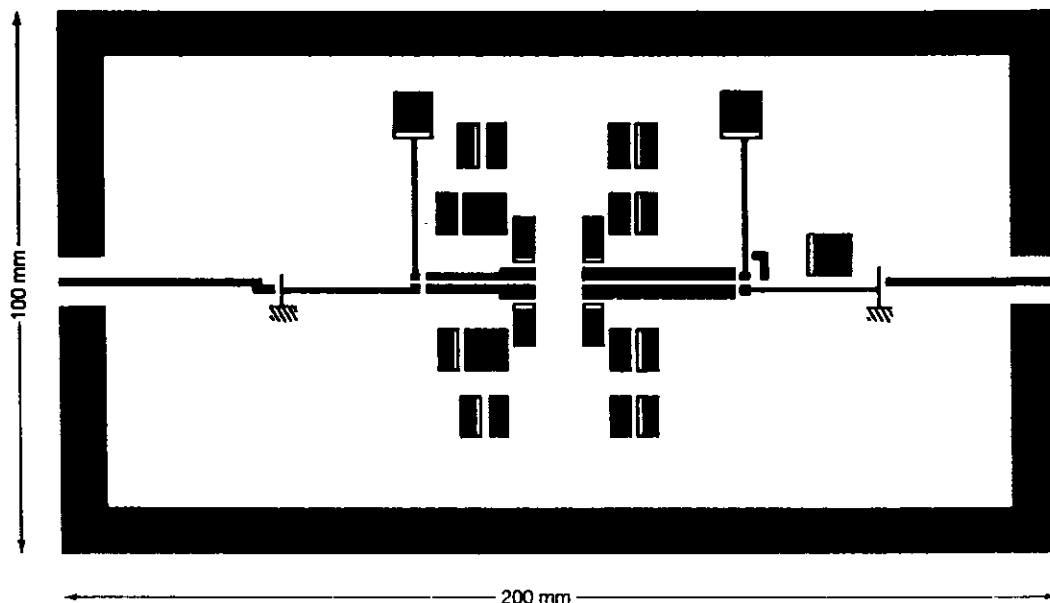
R2 : 5600 Ω , 1/2W

R3 : 2.2 Ω , 3W

R4, R5 : 56 Ω , 1W

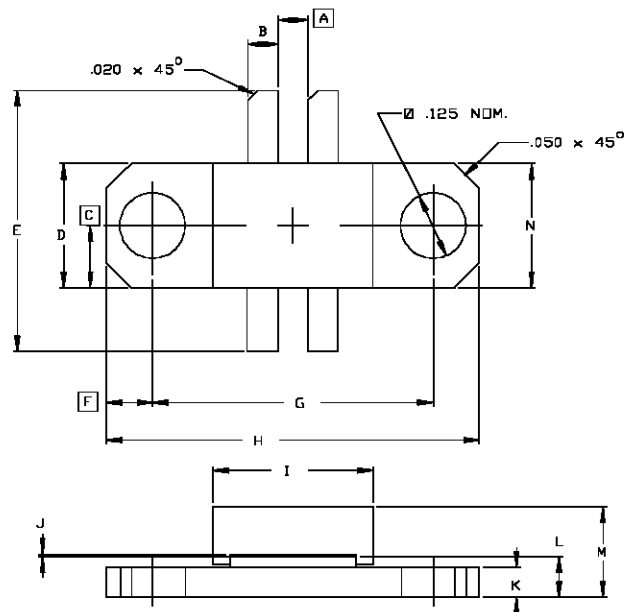
T1 : BDX 54 B

PHOTOMASTER OF TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0156



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.060/1,52		K	.055/1,40	.065/1,65
B	.055/1,40	.065/1,65	L	.075/1,91	.095/2,41
C	.124/3,15		M		.190/4,83
D	.243/6,17	.253/6,43	N	.245/6,22	.257/6,53
E	.635/16,13	.665/16,89			
F	.092/2,34				
G	.555/14,10	.565/14,35			
H	.739/18,77	.749/19,02			
I	.315/8,00	.327/8,31			
J	.002/0,05	.006/0,15			

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics 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 SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A