

# MS1512

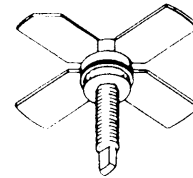
## RF & MICROWAVE TRANSISTORS UHF TV/LINEAR APPLICATIONS

### Features

- 860 MHz
- 20 VOLTS
- CLASS A LINEAR OPERATION
- $P_{OUT} = 1.0$  WATT
- $G_P = 10.0$  dB MINIMUM
- COMMON EMITTER CONFIGURATION

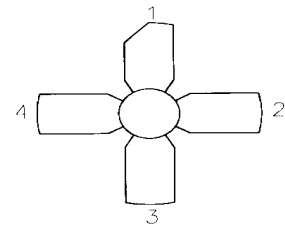
### DESCRIPTION:

The MS1512 is a silicon NPN bipolar transistor designed for UHF linear applications, specifically TV Bands IV and V. The MS1512 is characterized for high linearity, Class A operation. Device ruggedness and reliability are maximized with emitter ballasting and gold metallization.



**.280 4L STUD (M122)**  
epoxy sealed

### PIN CONNECTION



1. Collector      3. Base  
2. Emitter      4. Emitter

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

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	45	V
$V_{CEO}$	Collector-Emitter Voltage	25	V
$V_{EBO}$	Emitter-Base Voltage	3.5	V
$I_C$	Device Current	1.2	A
$P_{DISS}$	Power Dissipation	19.4	W
$T_J$	Junction Temperature	+200	$^{\circ}C$
$T_{STG}$	Storage Temperature	-65 to +150	$^{\circ}C$

### Thermal Data

$R_{TH(J-C)}$	Junction-case Thermal Resistance	9.0	$^{\circ}C/W$
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## ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

### STATIC

Symbol			Value			Unit
			Min.	Typ.		
$BV_{CBO}$	$I_C$	$I_E$	45	---		V
$BV_C$	$I = 40\text{mA}$	$R_{BE} \quad \Omega$	50		---	V
$C_{EO}$	$C = 40 \text{ mA}$	$I_B = 0 \text{ mA}$	24		---	V
$E_{BO}$	$I_E = .5 \text{ mA}$	$I_C = 0 \text{ mA}$	3.5		---	V
$C_{BO}$	$V_{CB} = 28 \text{ V}$	$I = 0 \text{ mA}$		---	0.45	
$h$	$V = 5 \text{ V}$	$I = 200 \text{ mA}$		---	120	-

### DYNAMIC

Symbol	Test Conditions						Unit
					Typ.	Max.	
$P$	$f = 860 \text{ MHz}$	$P_{IN}$	$V_{CE} = 20\text{V}$	1.0		---	W
$P$		$P = 100\text{mW}$	$V_{CE}$	10	---		dB
$IMD_3$	$P_{SYNC}$	$V_{CE} = 20\text{V}$	$I_C = 440 \text{ mA}$	---		-	dBc
$C_{OB}$	$f = 1 \text{ MHz}$	$V_{CB}$		---	---		pf

Conditions:  $V_{CE} = 20\text{V}$ ,  $I_C = 440 \text{ mA}$   
 Conditions:  $f_1 = 863.5\text{MHz}(-8\text{dBc})$ ,  $f_3 = 864.5\text{MHz}(7\text{dBc})$

### IMPEDANCE DATA

FRE	Z ( $\Omega$ )	$c_L(\Omega)$
470 MHz	2.0 - j 1.5	23 - j 35
650 MHz	1.9 - j 0.5	15 - j 27
860 MHz	1.8 + j 0.8	8.0 - j 15

**PACKAGE MECHANICAL DATA**

