MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

PRELIMINARY DATA

MRFS3866AHXV/HS

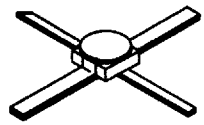
PROCESSED TO MIL-S-19500/398

SURFACE MOUNTABLE R.F. TRANSISTOR

30 VOLT, 400 MILLIAMPERE BIPOLAR NPN

DMO

Discrete Military Operation



CASE 303-01

MAXIMUM RATINGS			
Rating	**Symbol**	**Value**	**Unit**
Collector-Emitter Voltage	V_{CEO}	30	Vdc
Collector-Base Voltage	V_{CBO}	60	Vdc
Emitter-Base Voltage	V_{EBO}	3.5	Vdc
Collector Current — Continuous	I_C	400	mAdc
Device Dissipation @ T_A = 25°C Derate above 25°C	P_T	200 1.14	mW mW/°C
Operating Junction and Storage Temperature Range	T_J, T_{stg}	–55 to +200	°C

This document contains information on a new product. Specifications and information herein are subject to change without notice.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless noted)				
Characteristic	**Symbol**	**Min**	**Max**	**Unit**
Collector-Emitter Breakdown Voltage I_C = 5.0 mAdc	$V_{(BR)CEO}$	30	—	Vdc
Collector-Emitter Breakdown Voltage I_C = 40 mAdc, V_{BE} = 1.5 Vdc	$V_{(BR)CEX}$	55	—	Vdc
Collector-Base Breakdown Voltage I_C = 100 µAdc	$V_{(BR)CBO}$	60	—	Vdc
Emitter-Base Breakdown Voltage I_E = 100 µAdc	$V_{(BR)EBO}$	3.5	—	Vdc
Collector Cutoff Current V_{CE} = 28 Vdc	I_{CEO}	—	20	µAdc
Collector Cutoff Current V_{CE} = 55 Vdc V_{CE} = 55 Vdc, T_A = +150°C	I_{CES}	 — —	 0.1 2.0	mAdc
DC Current Gain I_C = 50 mAdc, V_{CE} = 5.0 Vdc I_C = 360 mAdc, V_{CE} = 5.0 Vdc I_C = 50 mAdc, V_{CE} = 5.0 Vdc, T_A = −55°C	h_{FE}	 25 8.0 12	 200 — —	—
Collector-Emitter Saturation Voltage I_C = 100 mAdc, I_B = 10 mAdc	$V_{CE(sat)}$	—	1.0	Vdc
Output Capacitance V_{CB} = 28 Vdc, I_E = 0, f = 0.1 to 1.0 MHz	C_{obo}	—	3.0	pF
Small-Signal Current Transfer Ratio, Magnitude I_C = 50 mAdc, V_{CE} = 15 Vdc, f = 200 MHz	$\|h_{fe}\|$	4.0	7.5	—
Output Power V_{CC} = 28 Vdc, f = 400 MHz, P_{in} = 0.15 W V_{CC} = 28 Vdc, f = 400 MHz, P_{in} = 0.075 W	P_{out}	 1.0 0.5	 2.0 —	W
Collector Efficiency V_{CC} = 28 Vdc, f = 400 MHz, P_{in} = 0.15 W V_{CC} = 28 Vdc, f = 400 MHz, P_{in} = 0.075 W	η	 45 40	 — —	%

ASSURANCE TESTING (Pre/Post Burn-In) **Burn-In Test Conditions: T_A = 30 ±5°C, V_{CB} = 28 Vdc, P_T = 200 mW**				
Characteristics Tested	**Symbol**	**Min**	**Max**	**Unit**
Collector Cutoff Current V_{CE} = 28 Vdc	I_{CEO}	—	20	µAdc
DC Current Gain I_C = 50 mAdc, V_{CE} = 5.0 Vdc	h_{FE}	25	200	—

Delta from Pre-Burn-In Measured Values			
Delta Collector Cutoff Current	ΔI_{CEO}	100 or 2.0 whichever is greater	% initial µAdc
Delta DC Current Gain	Δh_{FE}	±20	% initial