ADVANCED POWER TECHNOLOGY RF®

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MRF545

RF & MICROWAVE DISCRETE LOW POWER TRANSISTORS

Features

- Silicon PNP, high Frequency, high breakdown Transistor
- Maximum Unilateral Gain = 14 dB (typ) @ f = 200 MHz
- High Collector Base Breakdown Voltage - BVCBO = 100 V (min)
- High F_T - 1400 MHz

1. Emitter
2. Base
3. Collector

TO-39

DESCRIPTION:

Designed primarily for use in high frequency and medium and high resolution color video display monitors as well as other applications requiring high breakdown characteristics.

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CEO}	Collector-Emitter Voltage	70	Vdc
V_{CBO}	Collector-Base Voltage	100	Vdc
V_{EBO}	Emitter-Base Voltage	3.0	Vdc
I_C	Collector Current	400	mA

Thermal Data

P_D	Total Device Dissipation @ T_A = 25ºC Derate above 25ºC	3.5 20	Watts mW/ ºC
Tstg	Storage Temperature Range	-65 to +200	ºC

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

(off)

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BVCEO	Collector-Emitter Breakdown Voltage (IC = 1.0 mAdc, IB = 0)	70	-	-	Vdc
BVCBO	Collector-Base Breakdown Voltage (IC= 100 μAdc, IE=0)	100	-	-	Vdc
BVEBO	Emitter-Base Breakdown Voltage (IE = 100 μAdc, IC = 0)	3.0	-	-	Vdc
ICBO	Collector Cutoff Current (VCE = 80 Vdc, IE = 0 Vdc)	-	-	20	μA
ICES	Collector Cutoff Current (VCE = 80 Vdc, IE = 0 Vdc)	-	1.0	100	μA

(on)

HFE	DC Current Gain (IC = 50 mAdc, VCE = 6.0 Vdc)	15	-	-	

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
COB	Output Capacitance (VCB = 10Vdc, IE=0, f=1 MHz)	-	2.5	-	pF
CIB	Input Capacitance (VEB = 3Vdc, IE=0, f=1 MHz)	-	5.4	-	pF
CCB	Junction Capacitance (VCB = 10Vdc, IE=0, f=1 MHz)	-	2.8	3.2	pF
f_T	Current-Gain - Bandwidth Product (IC = 50 mAdc, VCE = 25 Vdc, f = 250 MHz)	1000	1400	-	MHz

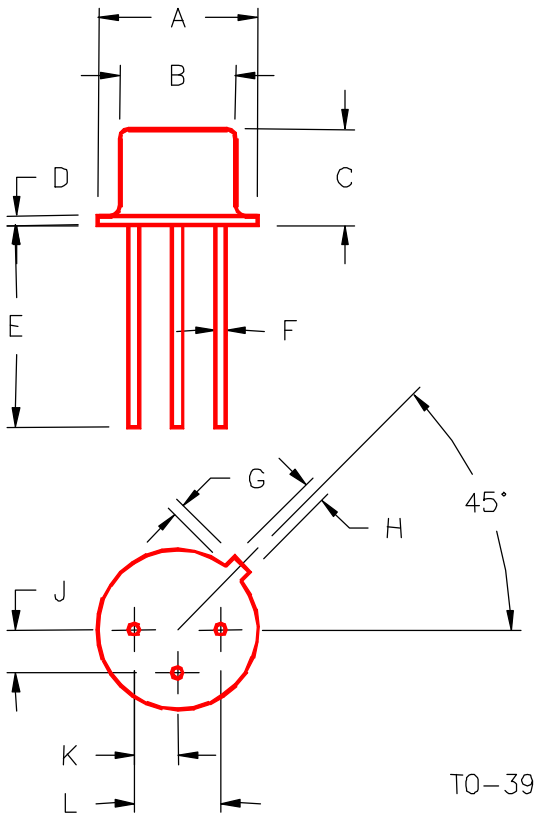
FUNCTIONAL

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$G_{U\ max}$	Maximum Unilateral Gain	IC = 50 mAdc, VCE = 25Vdc, f = 200 MHz	-	14	-	dB
MAG	Maximum Available Gain	IC = 50 mAdc, VCE = 25Vdc, f = 200 MHz	-	14.5	-	dB
$\|S_{21}\|^2$	Insertion Gain	IC = 50 mAdc, VCE = 25Vdc, f = 200 MHz	11.5	12.5	-	dB

Table 1. Common Emitter S-Parameters, @ VCE = 25 V, IC = 50 mA

f	S11		S21		S12		S22	
(MHz)	|S11|	∠ϕ	|S21|	∠ϕ	|S12|	∠ϕ	|S22|	∠ϕ
100	0.139	-105	7.43	101	0.031	83	0.573	-19
200	0.162	-168	4.35	80	0.066	82	0.508	-23
300	0.522	130	1.7	75	0.113	85	0.493	-29
400	0.260	129	2.23	63	0.154	85	0.487	-43
500	0.275	133	1.74	54	0.188	71	0.445	-53
600	0.262	123	1.49	46	0.226	74	0.495	-69
700	0.333	118	0.951	45	0.925	75	0.456	-71
800	0.327	122	1.3	35	0.379	66	0.424	-85
900	0.517	97	1.21	30	0.402	61	0.393	-109
1000	0.463	115	1.07	27	0.437	63	0.375	-115

PACKAGE STYLE M246



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.350/8,89	.370/9,40	J	.095/2,41	.105/2,67
B	.315/8,00	.335/8,51	K	.095/2,41	.105/2,67
C	.240/6,10	.260/6,60	L	.190/4,83	.210/5,33
D	.015/0,38	.045/1,14			
E	.500/12,70				
F	.016/0,41	.019/0,48			
G	.029/0,74	.040/1,02			
H	.028/0,71	.034/0,86			