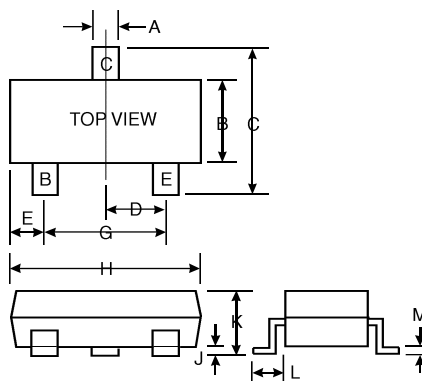


Features

Epitaxial Planar Die Construction
 Complementary NPN Type Available (MMBT2222A)
 Ideal for Medium Power Amplification and Switching

Mechanical Data

Case: SOT-23, Molded Plastic
 Terminals: Solderable per MIL-STD-202, Method 208
 Terminal Connections: See Diagram
 Marking: K2F, R2F
 Weight: 0.008 grams (approx.)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.19	1.40
C	2.10	2.50
D	0.89	1.05
E	0.45	0.61
G	1.78	2.05
H	2.65	3.05
J	0.013	0.15
K	0.89	1.10
L	0.45	0.61
M	0.076	0.178
All Dimensions in mm		

Maximum Ratings @ T_A = 25 C unless otherwise specified

Characteristic	Symbol	MMBT2907A	Unit
Collector-Base Voltage	V _{CB0}	-60	V
Collector-Emitter Voltage	V _{CEO}	-60	V
Emitter-Base Voltage	V _{EBO}	-5.0	V
Collector Current - Continuous (Note 1)	I _C	-600	mA
Power Dissipation (Note 1)	P _d	350	mW
Thermal Resistance, Junction to Ambient (Note 1)	R _{JA}	357	K/W
Operating and Storage and Temperature Range	T _J , T _{STG}	-55 to +150	C

- Notes:
- Valid provided that terminals are kept at ambient temperature.
 - Pulse test: Pulse width 300 s, duty cycle 2%.

Electrical Characteristics @ $T_A = 25\text{ C}$ unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)					
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-60		V	$I_C = -10\text{ A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-60		V	$I_C = -10\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5.0		V	$I_E = -10\text{ A}, I_C = 0$
Collector Cutoff Current	I_{CBO}		-10	nA A	$V_{CB} = -50\text{V}, I_E = 0$ $V_{CB} = -50\text{V}, I_E = 0, T_A = 125\text{ C}$
Collector Cutoff Current	I_{CEX}		-50	nA	$V_{CE} = -30\text{V}, V_{EB(OFF)} = -0.5\text{V}$
Base Cutoff Current	I_{BL}		-50	nA	$V_{CE} = -30\text{V}, V_{EB(OFF)} = -0.5\text{V}$
ON CHARACTERISTICS (Note 2)					
DC Current Gain	h_{FE}	75 100 100 100 50	300		$I_C = -100\mu\text{A}, V_{CE} = -10\text{V}$ $I_C = -1.0\text{mA}, V_{CE} = -10\text{V}$ $I_C = -10\text{mA}, V_{CE} = -10\text{V}$ $I_C = -150\text{mA}, V_{CE} = -10\text{V}$ $I_C = -500\text{mA}, V_{CE} = -10\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$		-0.4 -1.6	V	$I_C = -150\text{mA}, I_B = -15\text{mA}$ $I_C = -500\text{mA}, I_B = -50\text{mA}$
Base- Emitter Saturation Voltage	$V_{BE(SAT)}$		-1.3 -2.6	V	$I_C = 150\text{mA}, I_B = 15\text{mA}$ $I_C = 500\text{mA}, I_B = 50\text{mA}$
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C_{obo}		8.0	pF	$V_{CB} = -10\text{V}, f = 1.0\text{MHz}, I_E = 0$
Input Capacitance	C_{ibo}	—	30	pF	$V_{EB} = -2.0\text{V}, f = 1.0\text{MHz}, I_C = 0$
Current Gain-Bandwidth Product	f_T	200		MHz	$V_{CE} = -20\text{V}, I_C = -50\text{mA},$ $f = 100\text{MHz}$
SWITCHING CHARACTERISTICS					
Turn-On Time	t_{off}		45	ns	
Delay Time	t_d		10	ns	$V_{CC} = -30\text{V}, I_C = -150\text{mA},$ $I_{B1} = -15\text{mA}$
Rise Time	t_r		40	ns	
Turn-Off Time	t_{off}		100	ns	
Storage Time	t_s		80	ns	$V_{CC} = -6.0\text{V}, I_C = -150\text{mA},$ $I_{B1} = I_{B2} = -15\text{mA}$
Fall Time	t_f		30	ns	

- Notes: 1. Valid provided that terminals are kept at ambient temperature.
2. Pulse test: Pulse width 300 s, duty cycle 2%.