


SOT-23


1. BASE
2. EMITTER
3. COLLECTOR

MARKING: 2F
Features

- Epitaxial planar die construction
- Complementary NPN Type available(MMBT2222A)

Maximum Ratings

(Ratings at 25°C ambient temperature unless otherwise specified.)

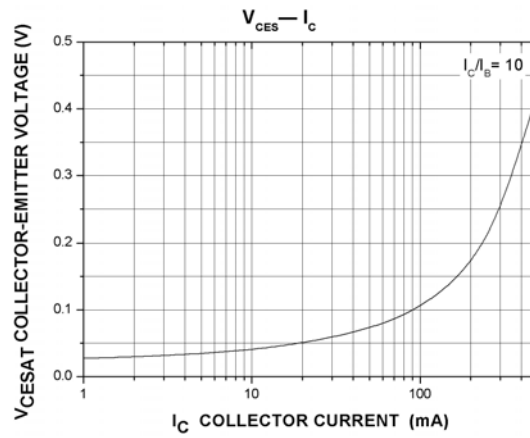
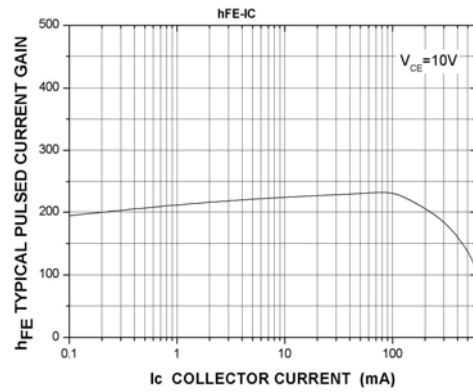
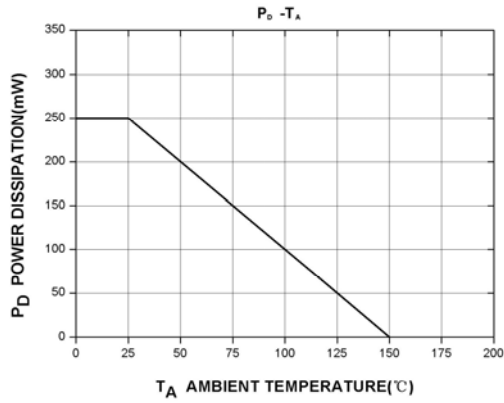
Symbol	Parameter	Value	Units
V_{CB0}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-60	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-600	mA
P_C	Total Device Dissipation	250	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	500	°C/W
T_J	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55 to +150	°C

Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified).

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C = -10mA, I_B = 0$	-60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -50V, I_E = 0$			-20	nA
Base cut-off current	I_{EBO}	$V_{CE} = -3V, I_C = 0$			-10	nA
Collector cut-off current	I_{CEX}	$V_{CE} = -30V, V_{BE(off)} = -0.5V$			-50	nA
DC current gain	$h_{FE(1)}$	$V_{CE} = -10V, I_C = -150mA$	100		300	
	$h_{FE(2)}$	$V_{CE} = -10V, I_C = -0.1mA$	75			
	$h_{FE(3)}$	$V_{CE} = -10V, I_C = -1mA$	100			
	$h_{FE(4)}$	$V_{CE} = -10V, I_C = -10mA$	100			
	$h_{FE(5)}$	$V_{CE} = -10V, I_C = -500mA$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C = -150mA, I_B = -15mA$			-0.4	V
	$V_{CE(sat)}^*$	$I_C = -500mA, I_B = -50mA$			-1.6	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C = -150mA, I_B = -15mA$			-1.3	V
	$V_{BE(sat)}^*$	$I_C = -500mA, I_B = -50mA$			-2.6	V
Transition frequency	f_T	$V_{CE} = -20V, I_C = -50mA, f = 100MHz$	200			MHz
Delay time	t_d	$V_{CE} = -30V, I_C = -150mA, I_{B1} = -15mA$			10	nS
Rise time	t_r				25	nS
Storage time	t_s	$V_{CE} = -6V, I_C = -150mA, I_{B1} = -I_{B2} = -15mA$			225	nS
Fall time	t_f				60	nS

 *Pulse test: $t_p \leq 300\mu s, \delta \leq 0.02$.



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