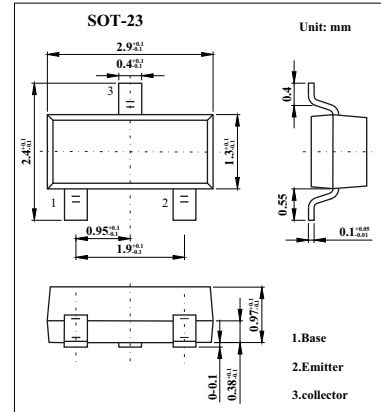


NPN Switching Transistor KMBT2222A

Features

High current (max. 600 mA)

Low voltage (max.40 V).



Absolute Maximum Ratings $T_a = 25$

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	75	V
Collector-emitter voltage	V_{CEO}	40	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	600	mA
Total power dissipation $T_a = 25$	P_{tot}	300	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	417	K/W
Operating and Storage and Temperature Range	T_j, T_{STG}	-65 to +150	

KMBT2222A

Electrical Characteristics Ta = 25

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	V(BR)CBO	Ic = 10 μ A, IE = 0	75			V
Collector-Emitter Breakdown Voltage	V(BR)CEO	Ic = 10 mA, IB = 0	40			V
Emitter-Base Breakdown Voltage	V(BR)EBO	Ic = 10 μ A, Ic = 0	6			V
Collector cutoff current	ICBO	IE = 0; VCB = 60 V			10	nA
		IE = 0; VCB = 60 V; Tj = 125			10	μ A
Emitter cutoff current	IEBO	Ic = 0; VEB = 3 V			10	nA
DC current gain	hFE	Ic = 0.1 mA; VCE = 10 V	35			
		Ic = 1 mA; VCE = 10 V	50			
		Ic = 10 mA; VCE = 10 V	75			
		Ic = 10 mA; VCE = 10 V; Ta = -55	35			
		Ic = 150 mA; VCE = 10 V	100		300	
		Ic = 150 mA; VCE = 1 V	50			
collector-emitter saturation voltage	VCEsat	Ic = 150 mA; IB = 15 mA			300	mV
		Ic = 500 mA; IB = 50 mA			1	V
base-emitter saturation voltage	VBEsat	Ic = 150 mA; IB = 15 mA	0.6		1.2	V
		Ic = 500 mA; IB = 50 mA			2	V
Delay time	td	IB1 = 15 mA, Ic = 150 mA, VCC = 30V, VBE = -0.5 V			15	ns
Rise time	tr				25	ns
Storage time	ts	IB1 = IB2 = 15 mA, Ic = 150 mA, VCC = 30V			200	ns
Fall time	tf				60	ns
Output Capacitance	Cobo	VCB = 10V, f = 1.0MHz, IE = 0			8	pF
Input Capacitance	Cibo	VEB = 0.5V, f = 1.0MHz, Ic = 0			25	pF
Noise Figure	NF	VCE = 10 V, Ic = 100 μ A, Rs = 1 k Ω , f = 1 kHz			4	dB
Transition frequency	ft	Ic = 20 mA; VCE = 20 V; f = 100 MHz	300			MHz

Marking

Marking	1P
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KMBT2222A

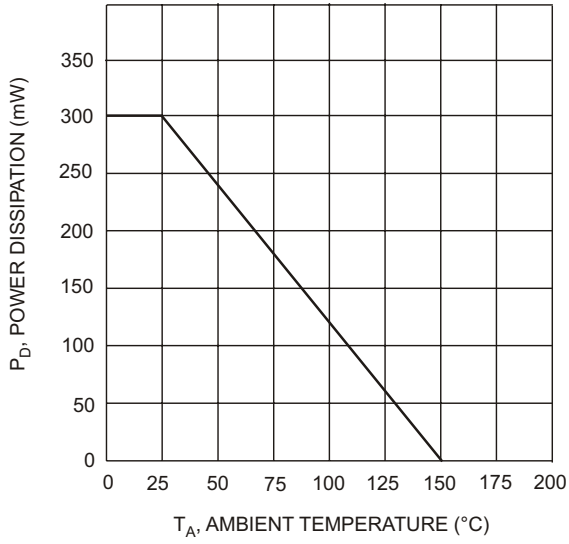


Fig. 1, Max Power Dissipation vs Ambient Temperature

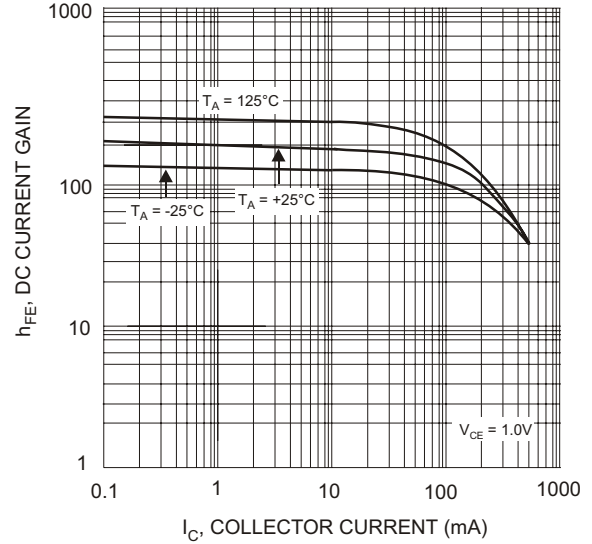


Fig. 2, Typical DC Current Gain vs Collector Current

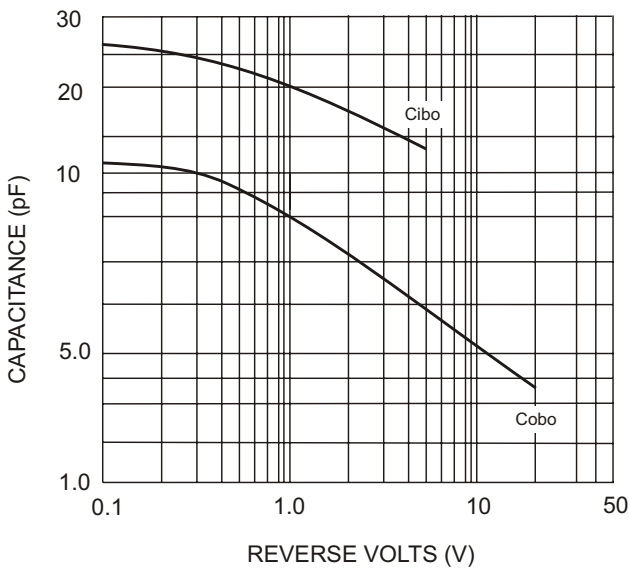


Fig. 3 Typical Capacitance

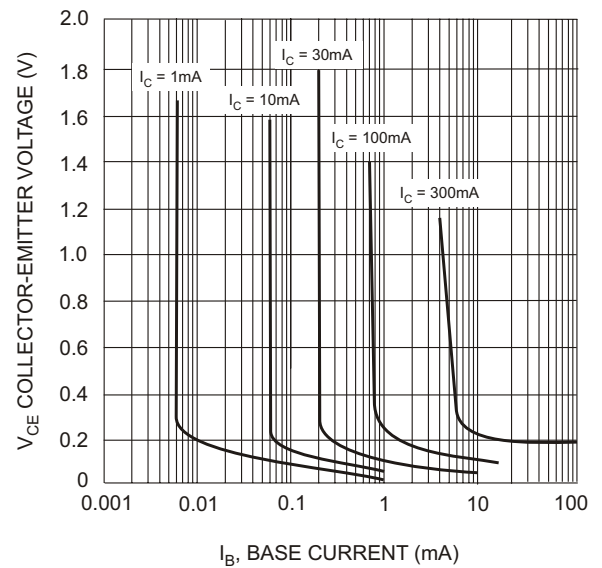


Fig. 4 Typical Collector Saturation Region

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