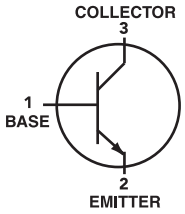
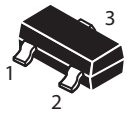
WEITRON

2SC2412K

NPN General Purpose Transistors

Lead(Pb)-Free





SOT-23

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	50	Vdc
Collector-Base Voltage	V_{CBO}	60	Vdc
Emitter-Base VOltage	V_{EBO}	7.0	Vdc
Collector Current-Continuous	I_C	150	mAdc

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (1) TA=25°C	P_D	200	mW
Derate above 25°C		1.6	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	°C/W
Junction and Storage, Temperature	T_J ,Tstg	-55 to +150	°C

DEVICE MARKING

2SC2412KQ=G1F, 2SC2412KR=G2F, 2SC2412KS=G3F

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage (I_C= 1.0mAdc .I_B=0)	$V_{(BR)CEO}$	50	-	Vdc
Collector-Base Breakdown Voltage (I_C= 50 μAdc.I_E=0)	$V_{(BR)CBO}$	60	-	Vdc
Emitter-Base Breakdown Voltage (I_E= 50 μAdc.I_C=0)	$V_{(BR)EBO}$	7.0	-	Vdc
Collector Cutoff Current (V_{CE}= 50V_{dc}, I_E= 0)	I_{CEO}	-	0.1	uAdc
Collector Cutoff Current (V_{CB}= 60Vdc,I_E=0)	I_{CBO}	-	0.1	uAdc
Emitter Cutoff Current (V_{EB}= 7.0 Vdc,I_C=0)	I_{EBO}	-	0.1	uAdc

1.FR-5=1.0 x 0.75 x 0.062 in

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted) (Countinued)

Characteristics	Symbol	Min	Typ	Max	Unit

ON CHARACTERISTICS

DC Current Gain (I_C= 1 mAdc, V_{CE}= 6.0 Vdc)	h_{FE}	120	-	560	-
Collector-Emitter Saturation Voltage (I_C= 50 mAdc, I_B= 5mAdc)	$V_{CE(sat)}$	-	-	0.4	Vdc
Output Capacitance V_{CE}=12Vdc, I_E=0A, f=1MHZ	Cob	-	2.0	3.5	PF
Current-Gain-Bandwidth Product (I_E= 2 mAdc, V_{CE}=12 Vdc,f=100 MHZ)	f_T	-	180	-	MHz

CLASSIFICATION OF h_{FE}

Rank	Q	R	S
Range	120-270	180-390	270-560
Marking	G1F	G2F	G3F

Fig.1 Grounded emitter propagation characteristics

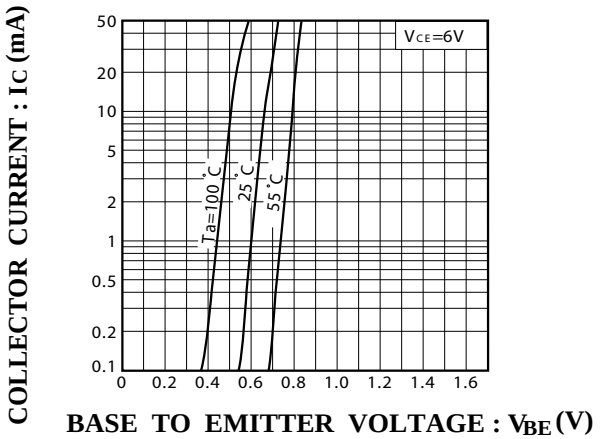


Fig.2 Grounded emitter output characteristics (1)

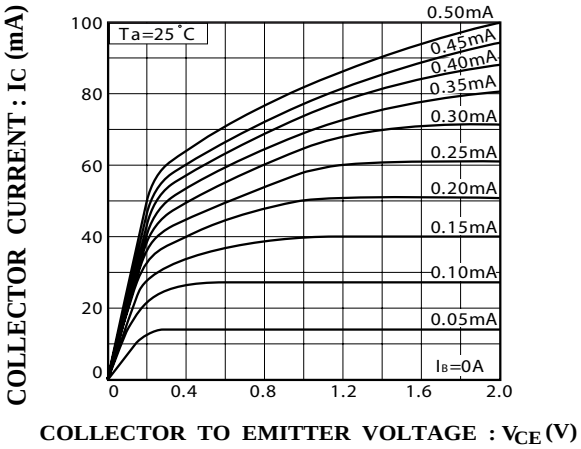


Fig.3 Grounded emitter output characteristics (11)

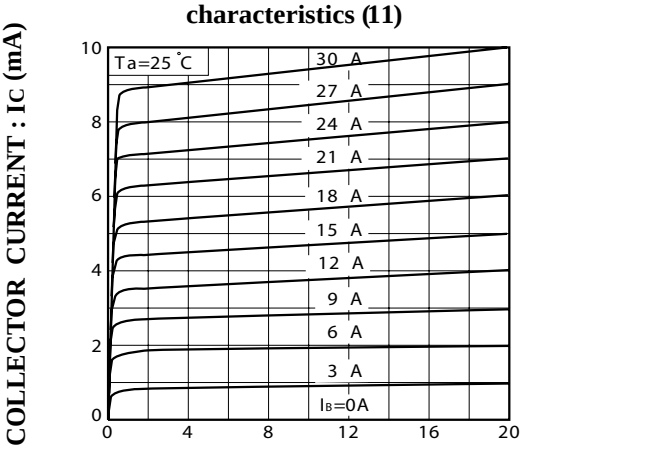


Fig.4 DC current gain vs. collector current (1)

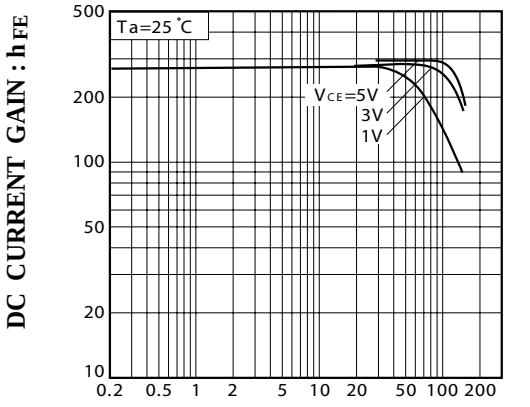


Fig.5 DC current gain vs. collector current (11)

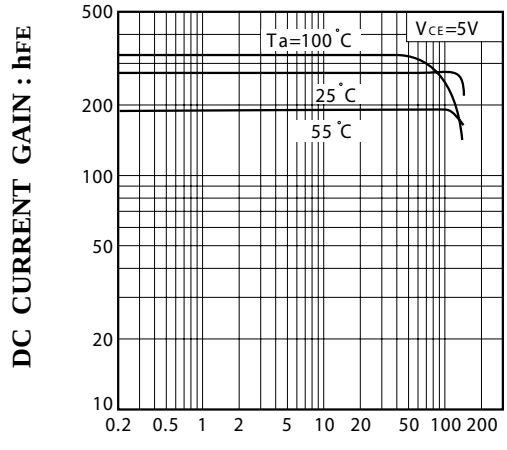


Fig. 6 Collector-emitter saturation voltage vs. collector current

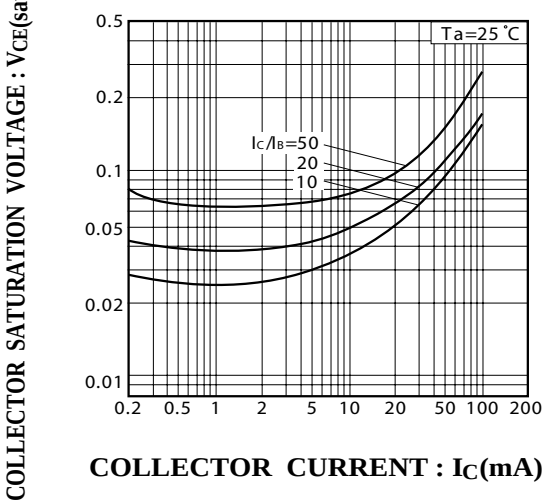


Fig.7 Collector-emitter saturation voltage vs. collector current (1)

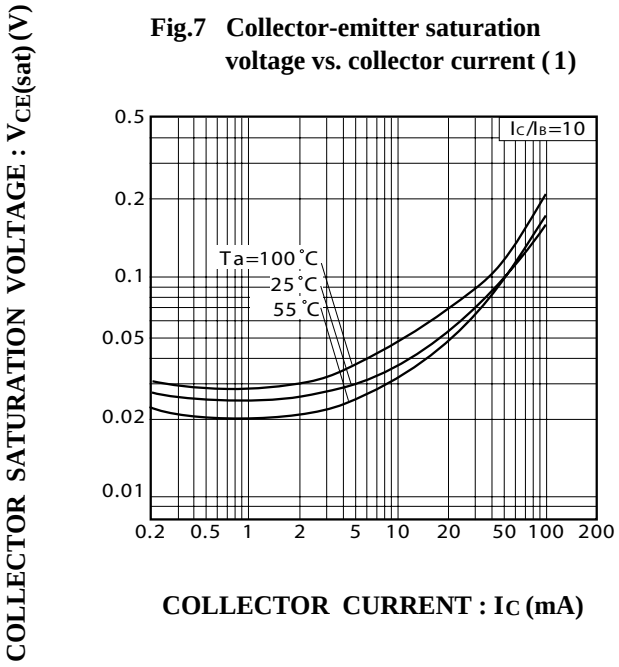


Fig.8 Gain bandwidth product vs. emitter current

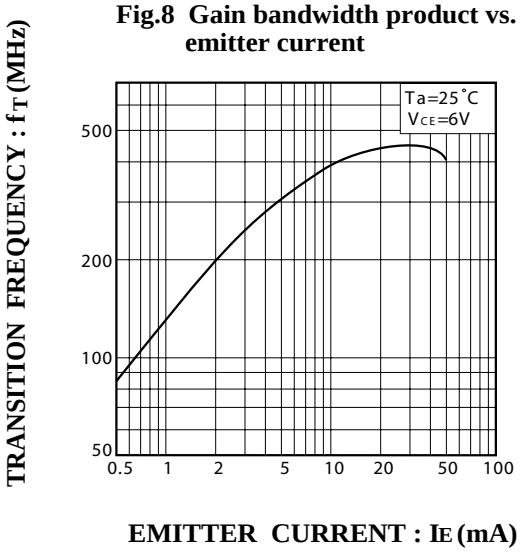
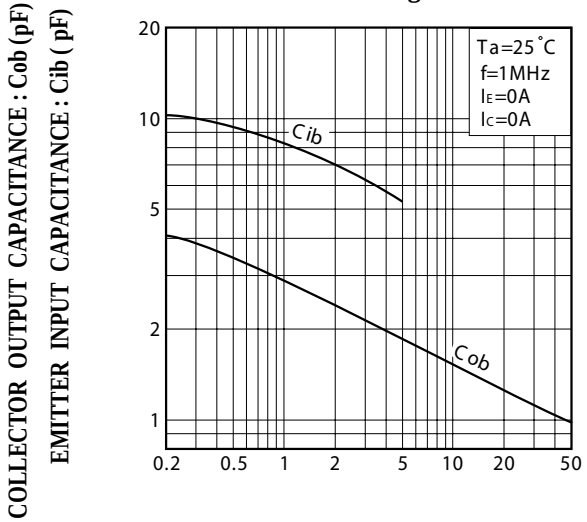
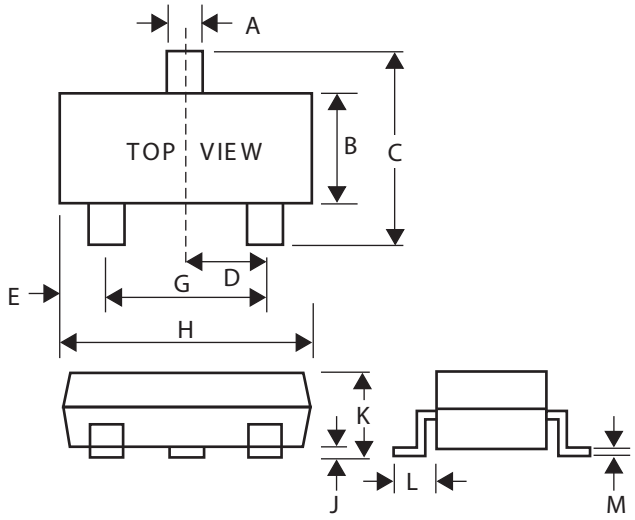


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage



SOT-23 Package Outline Dimensions

Unit:mm



Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25