



CHENMKO ENTERPRISE CO.,LTD

Lead free devices

**SURFACE MOUNT
General Purpose Transistor**

VOLTAGE 50 Volts CURRENT 0.15 Ampere

2SC2412MPT

APPLICATION

* Small Signal Amplifier .

FEATURE

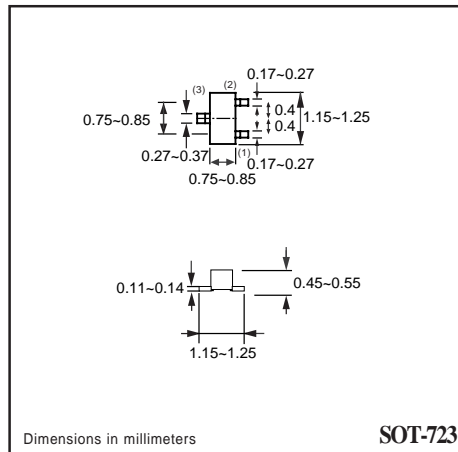
- * Small surface mounting type. (SOT-723)
- * Low saturation voltage $V_{CE(sat)}=0.4V(max.)(I_c=50mA)$
- * Low cob. Cob=2.0pF(Typ.)
- * $P_c= 150mW$ (mounted on ceramic substrate).
- * High saturation current capability.

CONSTRUCTION

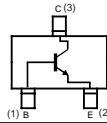
- * NPN Silicon Transistor
- * Epitaxial planner type

MARKING

- * HFE(Q):33
- * HFE(R):34
- * HFE(S):35



CIRCUIT



MAXIMUM RATINGS (At $T_A = 25^{\circ}C$ unless otherwise noted)

RATINGS	CONDITION	SYMBOL	MIN.	MAX.	UNITS
Collector - Base Voltage	Open Emitter	V_{CBO}	-	60	Volts
Collector - Emitter Voltage	Open Base	V_{CEO}	-	50	Volts
Emitter - Base Voltage	Open Collector	V_{EBO}	-	7	Volts
Collector Current DC		I_c	-	150	mAmps
Peak Collector Current		I_{CM}	-	150	mAmps
Peak Base Current		I_{BM}	-	15	mAmps
Total Power Dissipation	$T_A \leq 25^{\circ}C$; Note 1	P_{TOT}	-	150	mW
Storage Temperature		T_{STG}	-55	+150	$^{\circ}C$
Junction Temperature		T_J	-	+150	$^{\circ}C$
Operating Ambient Temperature		T_{AMB}	-55	+150	$^{\circ}C$

Note

1. Transistor mounted on ceramic substrate 50mmX50mmX0.8t.
2. Measured at Pulse Width 300 us, Duty Cycle 2%.

2004-06

RATING CHARACTERISTICS (2SC2412MPT)

ELECTRICAL CHARACTERISTICS (At $T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Collector Cut-off Current	$I_E=0; V_{CB}=60\text{V}$	I_{CBO}	-	-	0.1	μA
Emitter Cut-off Current	$I_C=0; V_{EB}=7\text{V}$	I_{CEO}	-	-	0.1	μA
DC Current Gain	$V_{CE}=6\text{V}$; Note 1 $I_C=1\text{mA}$; Note 2	h_{FE}	120	-	560	
Collector-Emitter Saturation Voltage	$I_C=50\text{mA}; I_B=5\text{mA}$	V_{CEsat}	-	-	0.4	Volts
Base-Emitter Saturatio Voltage	$I_C=50\text{mA}; I_B=5\text{mA}$	V_{BEsat}	-	-	1.1	mVolts
Output Collector Capacitance	$I_E=I_C=0; V_{CB}=12\text{V}$; $f=1\text{MHz}$	C_{ob}	-	2	3.5	pF
Transition Frequency	$I_C=2\text{mA}; V_{CE}=12\text{V}$; $f=100\text{MHz}$	f_T	-	180	-	MHz

Note :

1. Pulse test: $t_p \leq 300\mu\text{Sec}$; $\delta \leq 0.02$.

2. h_{FE} : Classification Q: 120 to 270, R: 180 to 390, S: 270 to 560

RATING CHARACTERISTIC CURVES (2SC2412MPT)

Fig.1 Grounded emitter propagation characteristics

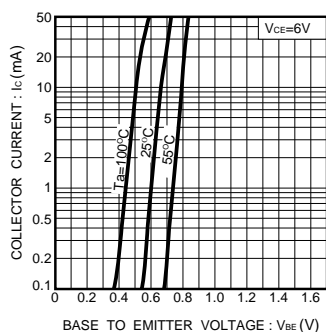


Fig.2 Grounded emitter output characteristics (1)

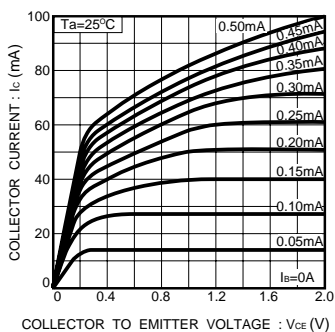
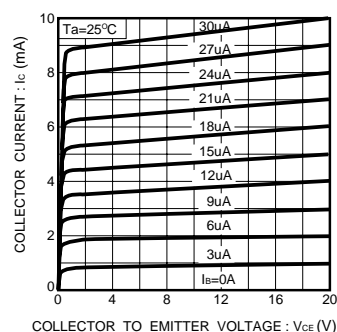


Fig.3 Grounded emitter output characteristics (2)



RATING CHARACTERISTIC CURVES (2SC2412MPT)

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

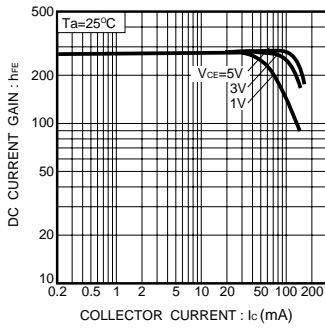


Fig.5 DC current gain vs. collector current (2)

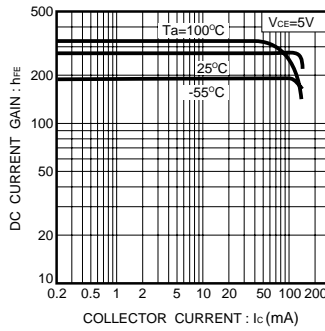


Fig. 6 Collector-emitter saturation voltage vs. collector current

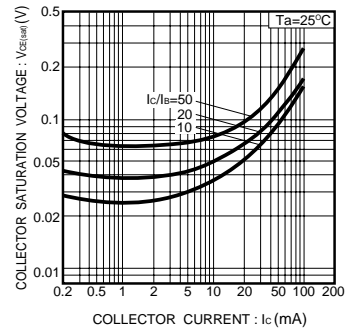


Fig.7 Collector-emitter saturation voltage vs. collector current (1)

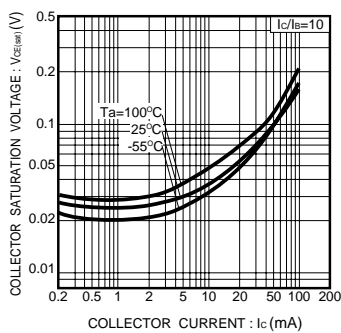


Fig.8 Collector-emitter saturation voltage vs. collector current (2)

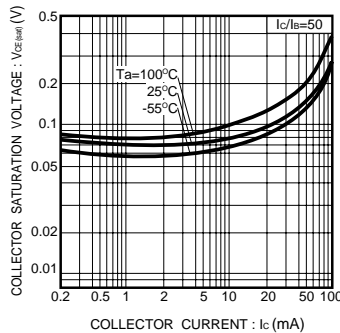


Fig.9 Gain bandwidth product vs. emitter current

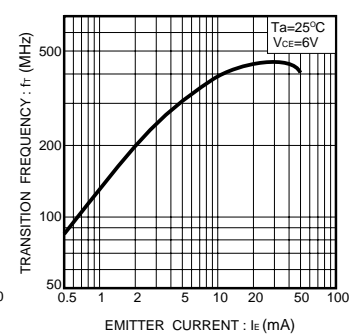


Fig.10 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

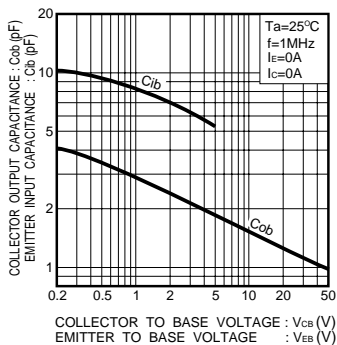


Fig.11 Base-collector time constant vs. emitter current

