



CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

SURFACE MOUNT
High Voltage NPN Transistor

VOLTAGE 300 Volts CURRENT 500 mAmpere

CHTA42LGP-A

APPLICATION

- * Small Signal Amplifier .

FEATURE

- * Surface mount package. (SOT-23)
- * Low saturation voltage $V_{CE(sat)}=0.5V(max.)$ ($I_C=20mA$)
- * Low cob. Cob=3.0pF(Typ.)
- * $P_D= 300mW$ (mounted on ceramic substrate).
- * High saturation current capability.

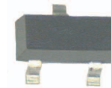
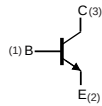
CONSTRUCTION

- * NPN Silicon Transistor
- * Epitaxial planner type

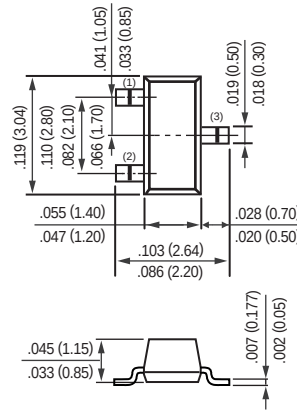
MARKING

- * NB

CIRCUIT



SOT-23



Dimensions in millimeters

SOT-23

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

RATINGS	CONDITION	SYMBOL	MIN.	MAX.	UNITS
Collector - Base Voltage	Open Emitter	V_{CBO}	-	300	Volts
Collector - Emitter Voltage	Open Base	V_{CEO}	-	300	Volts
Emitter - Base Voltage	Open Collector	V_{EBO}	-	6.0	Volts
Collector Current DC		I_C	-	500	mAmps
Peak Collector Current		I_{CM}	-	500	mAmps
Peak Base Current		I_{BM}	-	15	mAmps
Total Power Dissipation	$T_A \leq 25^{\circ}C$; Note 1	P_{TOT}	-	300	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%.

RATING CHARACTERISTICS (CHTA42LGP-A)

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

PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Collector Cut-off Current	$I_E=0$; $V_{CB}=200\text{V}$	I_{CBO}	-	-	0.1	μA
Emitter Cut-off Current	$I_C=0$; $V_{EB}=6.0\text{V}$	I_{CEO}	-	-	0.1	μA
DC Current Gain	$V_{CE}=10\text{V}$; Note 1 $I_C=1.0\text{mA}$ $I_C=10\text{mA}$ $I_C=30\text{mA}$	h_{FE}	25	-	-	
			40	-	-	
			40	-	-	
			40	-	-	
Collector-Emitter Saturation Voltage	$I_C=20\text{mA}$; $I_B=2\text{mA}$	$V_{CE(sat)}$	-	-	0.5	Volts
Base-Emitter Saturatio Voltage	$I_C=20\text{mA}$; $I_B=2\text{mA}$	$V_{BE(sat)}$	-	-	0.9	Volts
Output Collector Capacitance	$I_E=I_C=0$; $V_{CB}=20\text{V}$; $f=1\text{MHz}$	C_{ob}	-	-	3.0	pF
Transition Frequency	$I_C=10\text{mA}$; $V_{CE}=20\text{V}$; $f=100\text{MHz}$	f_T	50	-	-	MHz

Note :

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

RATING CHARACTERISTIC CURVES (CHTA42LGP-A)

Figure 1. DC Current Gain

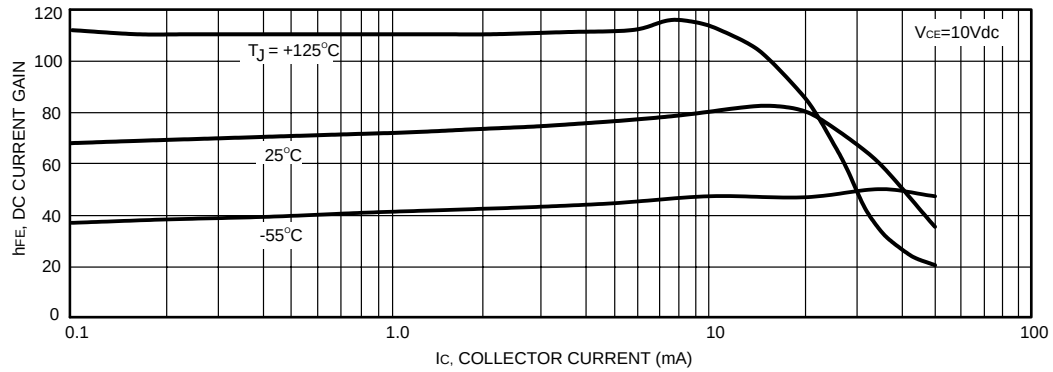


Figure 2. Capacitance

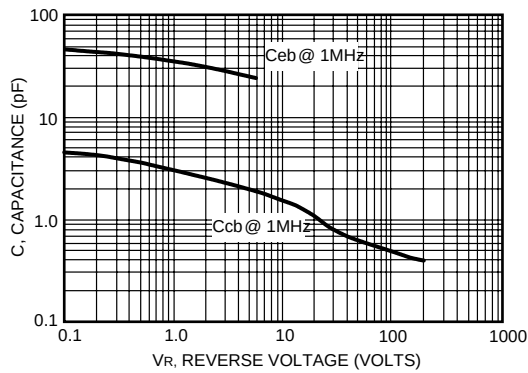


Figure 3. Current-Gain - Bandwidth

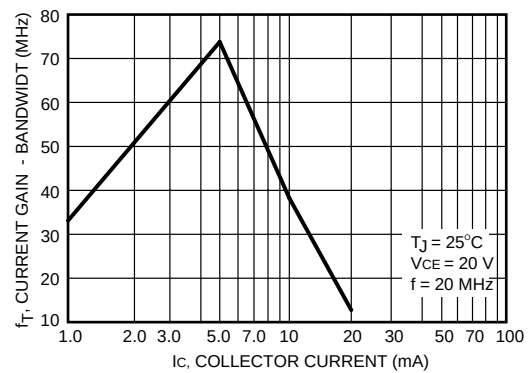
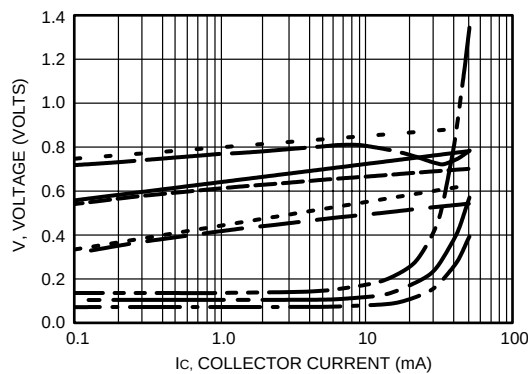


Figure 4. "ON" Voltages



- $V_{CE}(\text{sat}) @ 25^\circ\text{C}, I_C/I_B = 10$
- - $V_{CE}(\text{sat}) @ 125^\circ\text{C}, I_C/I_B = 10$
- . $V_{CE}(\text{sat}) @ -55^\circ\text{C}, I_C/I_B = 10$
- $V_{BE}(\text{sat}) @ 25^\circ\text{C}, I_C/I_B = 10$
- - $V_{BE}(\text{sat}) @ 125^\circ\text{C}, I_C/I_B = 10$
- . $V_{BE}(\text{sat}) @ -55^\circ\text{C}, I_C/I_B = 10$
- $V_{BE}(\text{on}) @ 25^\circ\text{C}, V_{CE} = 10\text{V}$
- - $V_{BE}(\text{on}) @ 125^\circ\text{C}, V_{CE} = 10\text{V}$
- . $V_{BE}(\text{on}) @ -55^\circ\text{C}, V_{CE} = 10\text{V}$