

## SMD Type

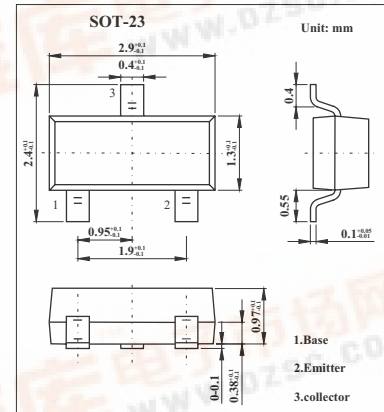
## Transistors

## Silicon NPN Epitaxial Type Transistor

### 2SC2712

#### ■ Features

- High voltage and high current:  $V_{CE0} = 50\text{ V}$ ,  $I_C = 150\text{ mA}$  (max)
- Excellent hFE linearity :  $h_{FE} (I_C = 0.1\text{ mA}) / h_{FE} (I_C = 2\text{ mA}) = 0.95$  (typ.)
- High hFE:  $h_{FE} = 70 \sim 700$
- Low noise:  $NF = 1\text{ dB}$  (typ.),  $10\text{ dB}$  (max)



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	60	V
Collector-emitter voltage	$V_{CE0}$	50	V
Emitter-base voltage	$V_{EB0}$	5	V
Collector current	$I_C$	150	mA
Base current	$I_B$	30	mA
Collector power dissipation	$P_C$	150	mW
Junction temperature	$T_j$	125	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55 to +125	$^\circ\text{C}$

#### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = 60\text{ V}$ , $I_E = 0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5\text{ V}$ , $I_C = 0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE} = 6\text{ V}$ , $I_C = 2\text{ mA}$	70		700	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100\text{ mA}$ , $I_B = 10\text{ mA}$		0.1	0.25	V
Collector output capacitance	$C_{ob}$	$V_{CB} = 10\text{ V}$ , $I_E = 0$ , $f = 1\text{ MHz}$		2	3.5	pF
Noise figure	NF	$V_{CE} = 6\text{ V}$ , $I_C = 0.1\text{ mA}$ , $f = 1\text{ KHz}$ , $R_G = 10\text{ K}\Omega$		1	10	dB
Transition frequency	$f_T$	$V_{CE} = 10\text{ V}$ , $I_C = 1\text{ mA}$	80			MHz

#### ■ hFE Classification

Marking	LO	LY	LG	LL
Rank	O	Y	GR	BL
hFE	70~140	120~240	200~400	350~700

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## ■ Typical Characteristics

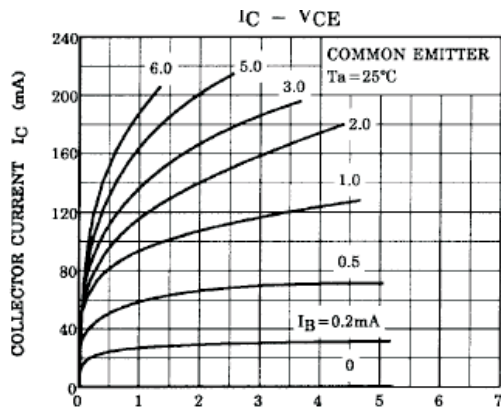


Fig.1 Collector Emitter Voltage

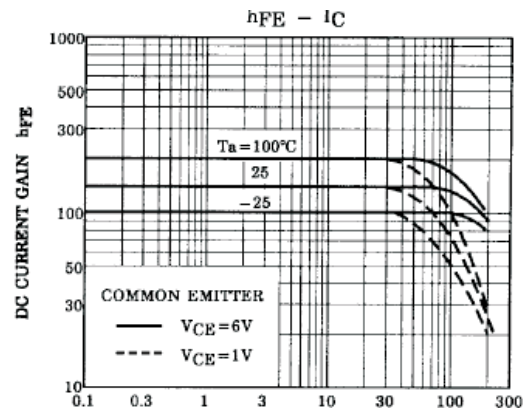


Fig.2 Collector Current

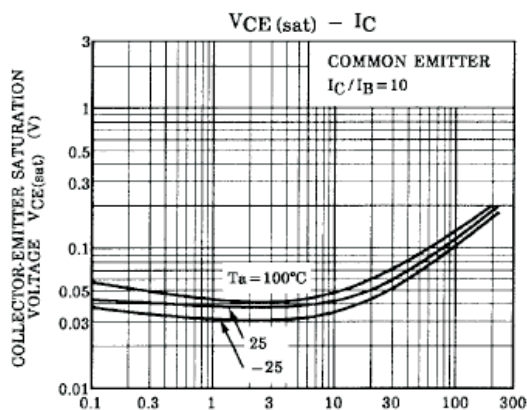


Fig.3 Collector Current

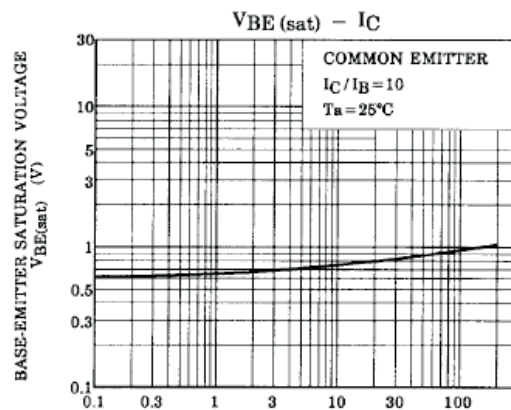


Fig.4 Collector Current

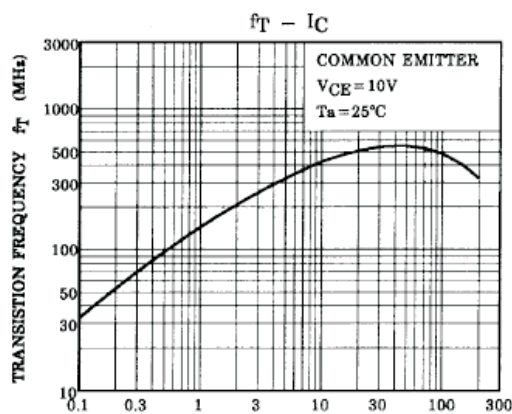


Fig.5 Collector Current

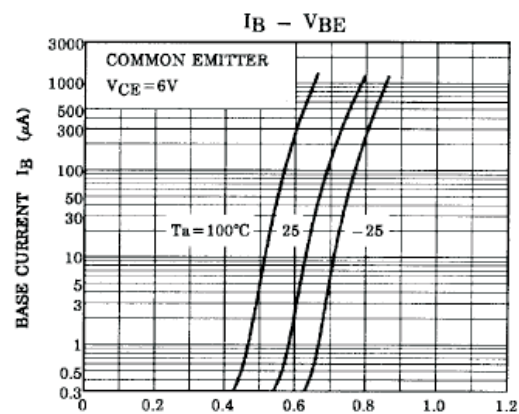


Fig.6 Base Emitter Voltage

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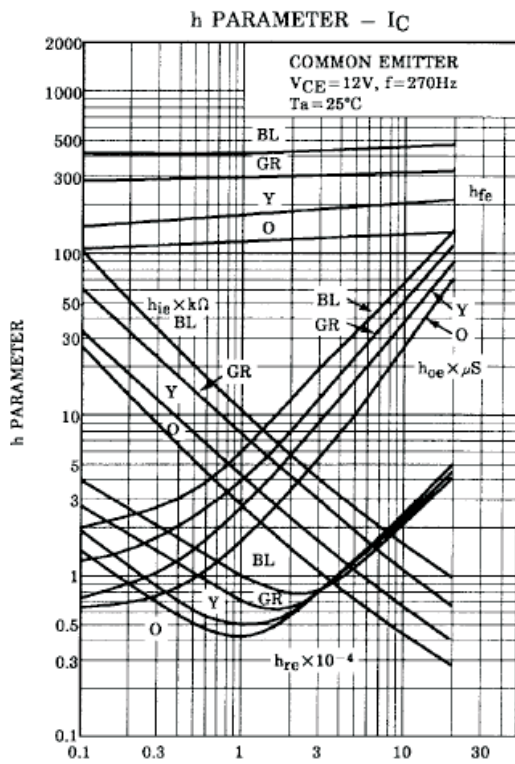


Fig.7 Collector Current

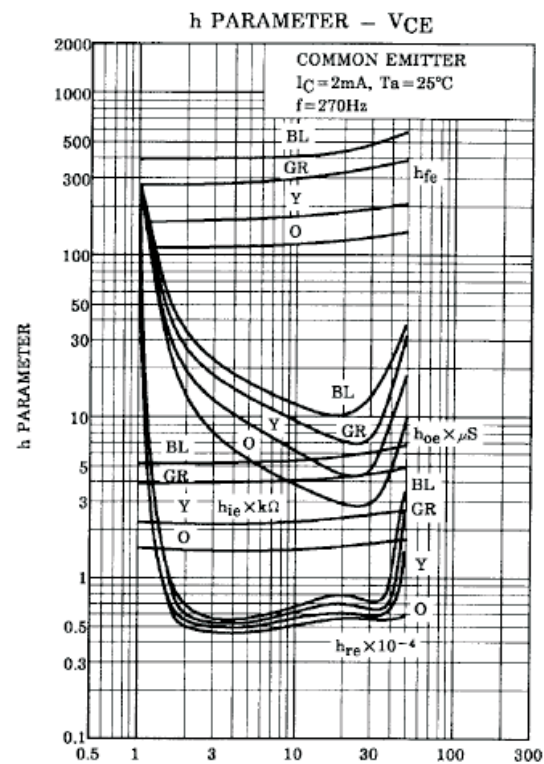


Fig.8 Collector Emitter Voltage

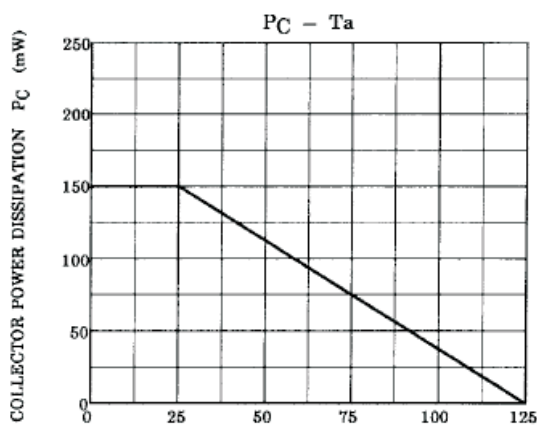


Fig.9 Ambient Temperature