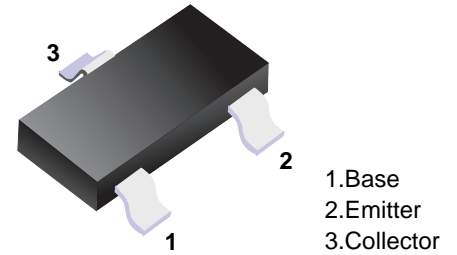


■ **NPN Transistors**



■ **Simplified outline(SOT-23)**

■ **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 dB (max)

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	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	$^\circ\text{C}$

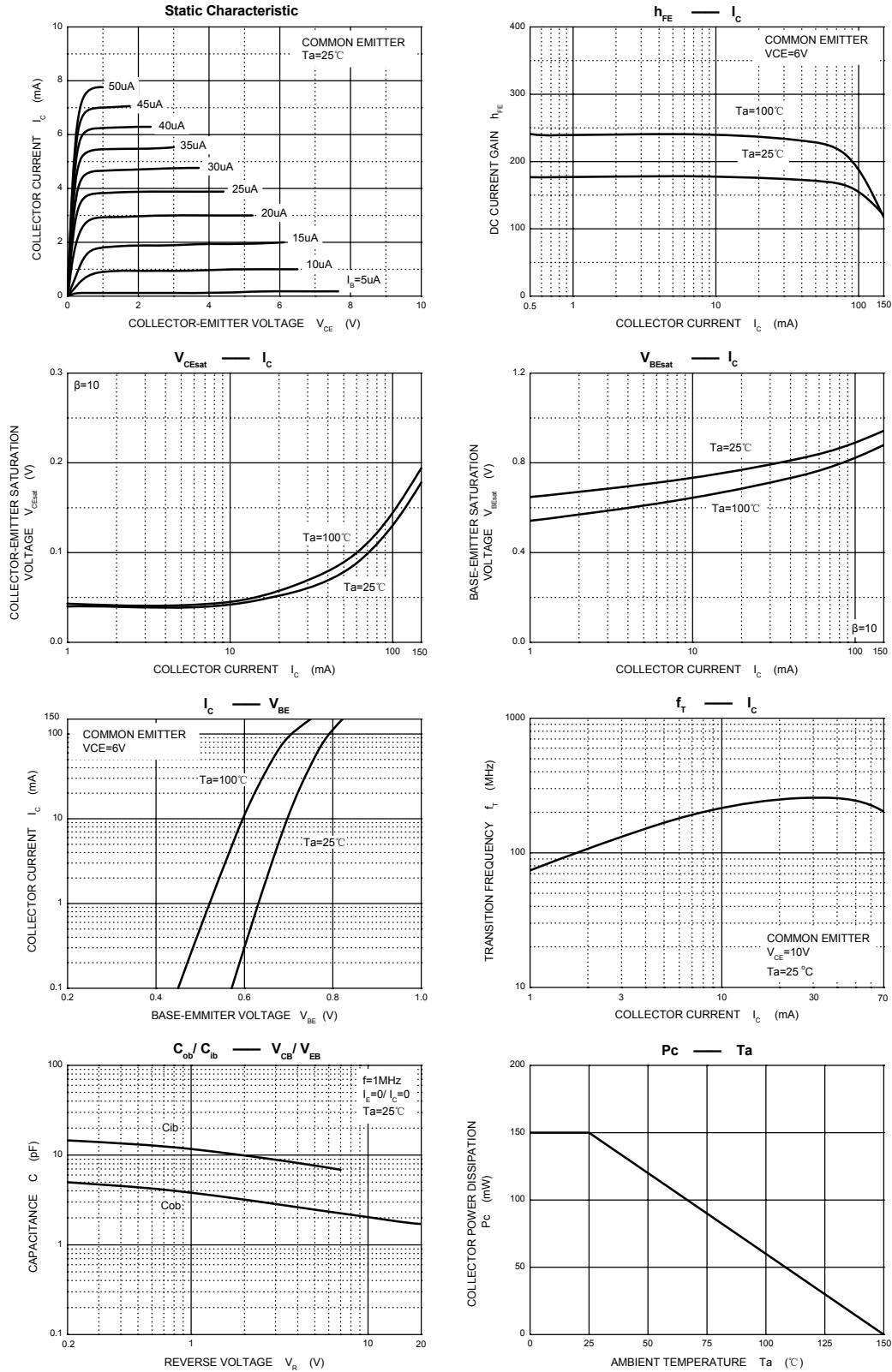
■ **Electrical Characteristics $T_a = 25^\circ\text{C}$**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_c = 100\ \mu\text{A}$, $I_E = 0$	60			V
Collector- emitter breakdown voltage	V_{CEO}	$I_c = 1\text{ mA}$, $I_B = 0$	50			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100\ \mu\text{A}$, $I_c = 0$	5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 60\text{ V}$, $I_E = 0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{ V}$, $I_c = 0$			100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c = 100\text{ mA}$, $I_B = 10\text{ mA}$			0.25	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_c = 100\text{ mA}$, $I_B = 10\text{ mA}$			1.2	
DC current gain	hFE	$V_{CE} = 6\text{ V}$, $I_c = 2\text{ mA}$	70		700	
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
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$		2	3.5	pF
Transition frequency	f_T	$V_{CE} = 10\text{ V}$, $I_c = 1\text{ mA}$	80			MHz

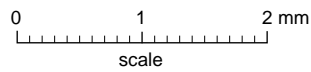
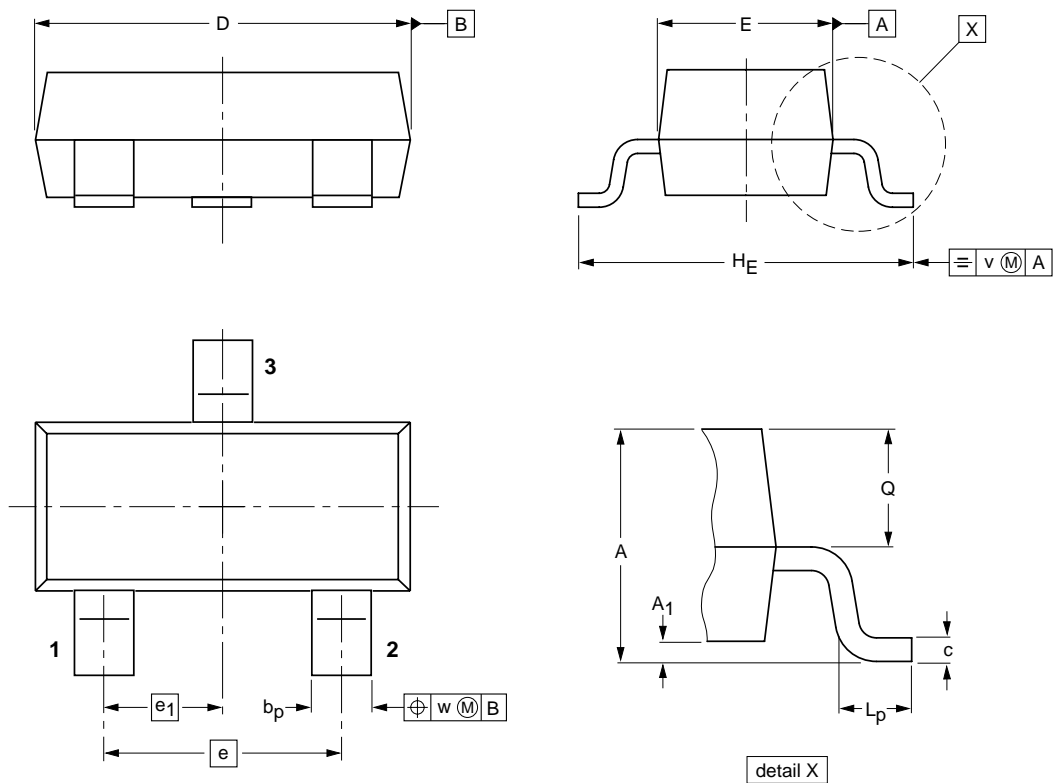
■ **hFE Classification**

Type	2SC2712-O	2SC2712-Y	2SC2712-G	2SC2712-L
Range	70-140	120-240	200-400	350-700
Marking	LO	LY	LG	LL

■ Typical Characteristics



■ SOT-23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1