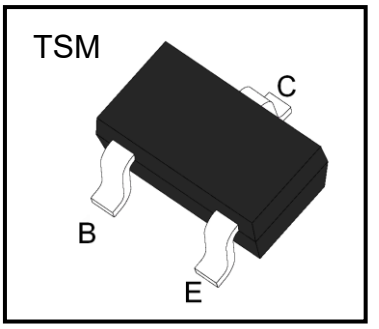
NPN Plastic-Encapsulate Transistors

Application

- DC-DC converter
- Relay drivers, Lamp drivers
- Motor drivers, Strobes application



Features

- High current capacitance.
- Low collector-emitter saturation voltage.
- High speed Sswitching.
- High allowable power dissipation.
- Complementary to FTA1552X.

Marking: HL

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Value	Unit
Collector-base voltage	BV_{CBO}	80	V
Collector-emitter voltage	BV_{CES}	80	V
	BV_{CEO}	50	
Emitter-base voltage	BV_{EBO}	6	V
Collector current DC	I_C	3	A
Collector current pulse	I_{CP}	6	A
Base current	I_B	600	mA
Collector power dissipation*	P_C	1	W
Junction temperature	T_j	150	℃
Storage temperature	T_{stg}	-55 ~ 150	℃

* Device mounted on a printed-circuit board, single sided copper, tinplated and mounting pad for collector 1 cm^2

Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	I_C = 10μA, I_E = 0	80			V
Collector-emitter breakdown voltage	BV_{CES}	I_C = 100μA, V_{BE} = 0	80			V
	BV_{CEO}	I_C = 1mA, I_B = 0	50			V
Emitter-base breakdown voltage	BV_{EBO}	I_E = 10μA, I_C = 0	6			V
Collector cut-off current	I_{CBO}	V_{CB} = 40V, I_E = 0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 4V, I_C = 0			0.1	μA
DC current gain	h_{FE}	V_{CE}= 2V, I_B= 100mA	200		560	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 1A, I_B = 50mA			120	mV
		I_C = 2A, I_B = 100mA			210	
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = 2A, I_B = 100mA			1.2	V
Transition frequency	f_T	V_{CE} = 10V, I_E = 500mA		380		MHz
Collector output capacitance	C_{ob}	V_{CB} = 10V,I_E =0,f=1MHz		13		pF
Turn on time	t_{on}	V_{CC}=25V, I_C = -1A I_{B1}= -$I_{B\,2}$= 100mA Pw= 20μs,Duty cycle ≤1%		35		ns
Storage time	t_{stg}			300		ns
Fall time	t_f			22		ns

Typical Characteristics

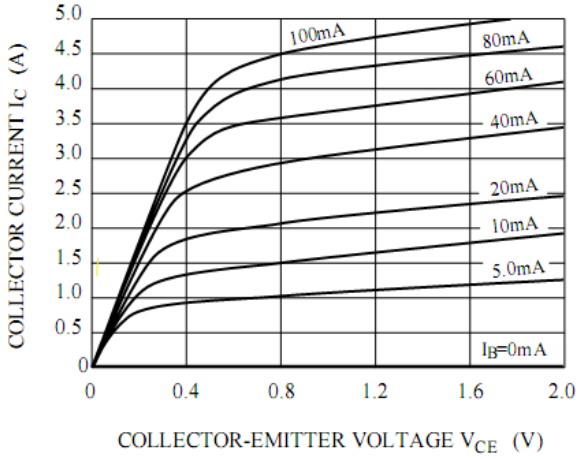


Figure 1. Static characteristics

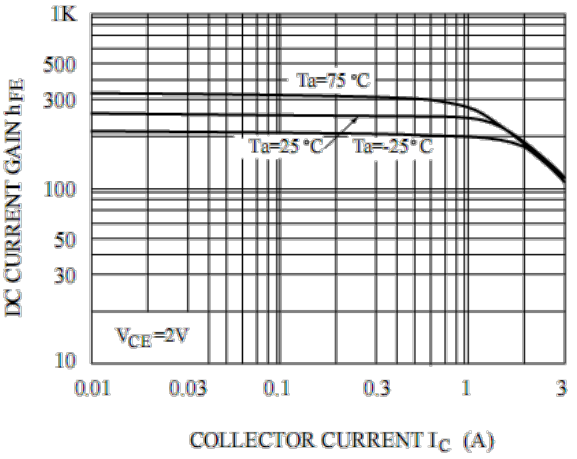


Figure 2. DC current Gain

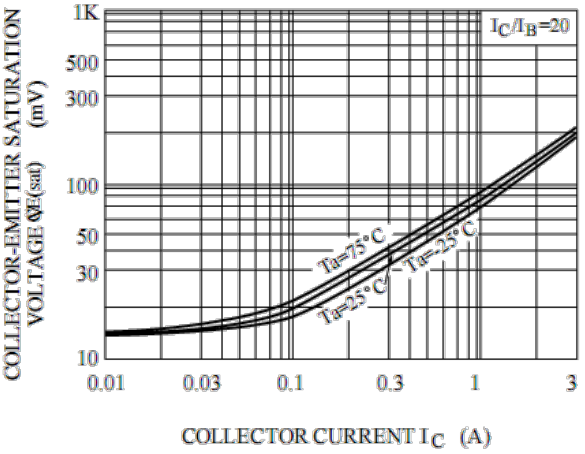


Figure 3. Collector-emitter Saturation Voltage

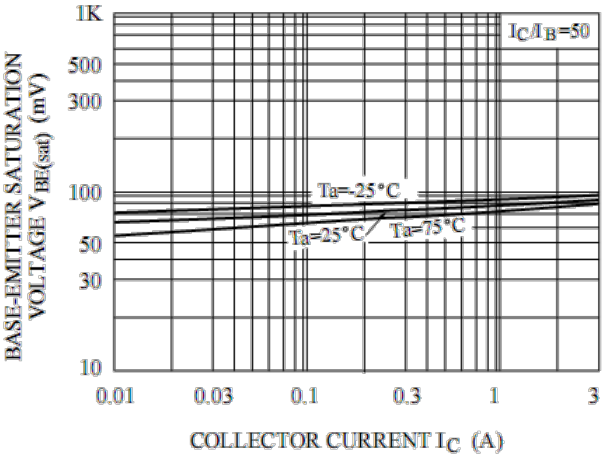


Figure 4. Base -emitter Saturation Voltage

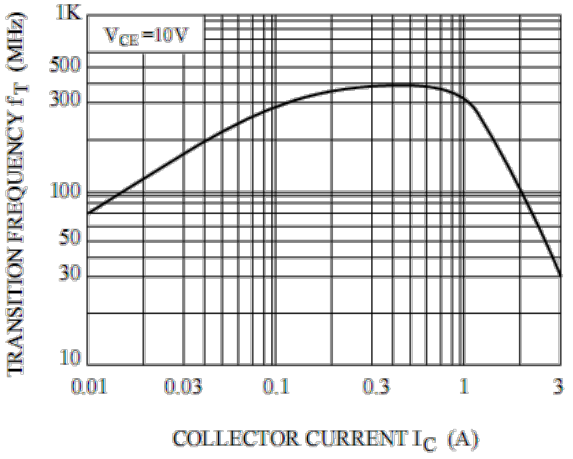


Figure 5. Transition frequency

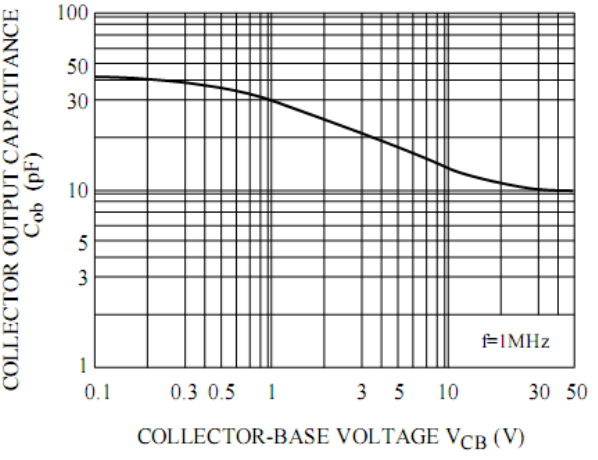
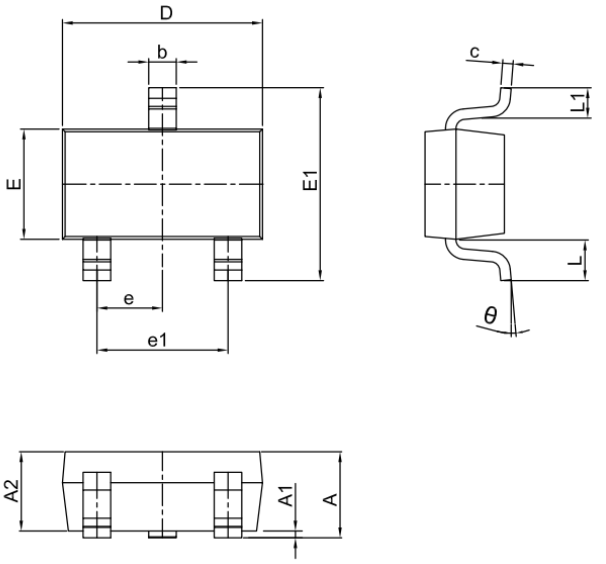


Figure 6. Capacitance characteristics

Package Dimensions



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.15	1.35	0.045	0.053
A1	0.00	0.10	0.000	0.004
A2	1.05	1.25	0.041	0.049
b	0.34	0.45	0.013	0.018
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.50	1.70	0.059	0.067
E1	2.80	3.00	0.110	0.118
e	0.90	1.00	0.035	0.039
e1	1.80	2.00	0.071	0.079
L	0.50	0.70	0.020	0.028
L1	0.30	0.60	0.012	0.024