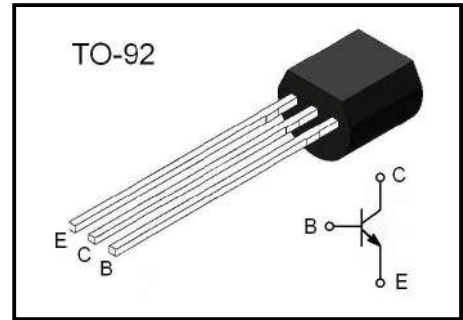


**Plastic-Encapsulate Transistors**

**TRANSISTOR (NPN)**



**FEATURE**

◆Power dissipation

**MAXIMUM RATINGS (Ta=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CB0}$	120	V
Collector-Emitter Voltage	$V_{CE0}$	60	V
Emitter-Base Voltage	$V_{EB0}$	6	V
Collector Current	$I_C$	1	A
Collector Power Dissipation	$P_C$	0.75	W
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	167	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{stg}$	-55~+150	°C

**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

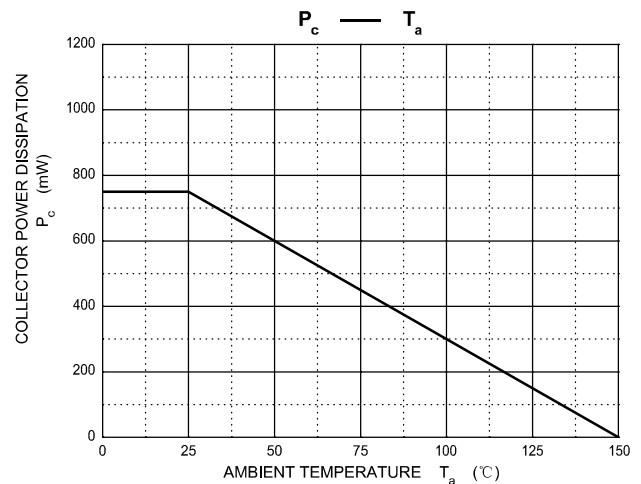
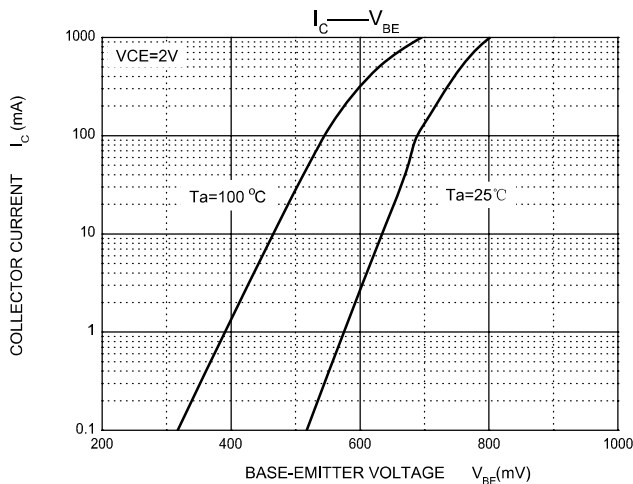
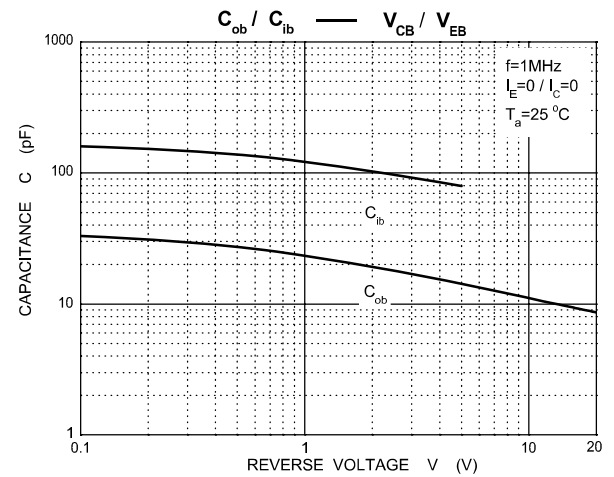
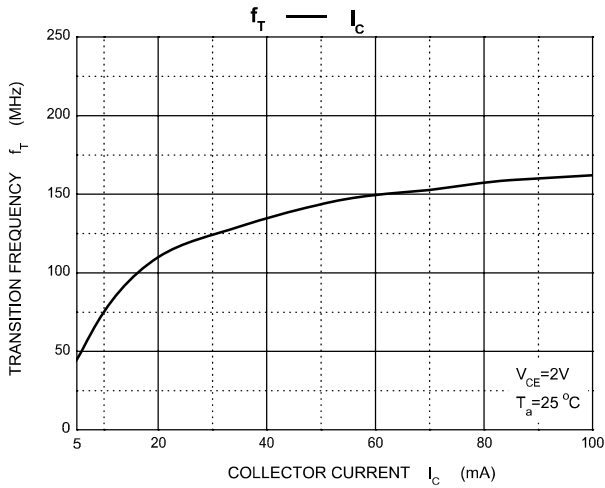
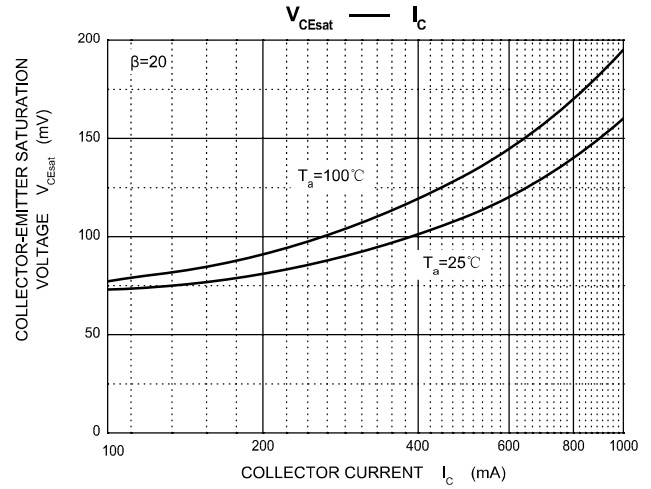
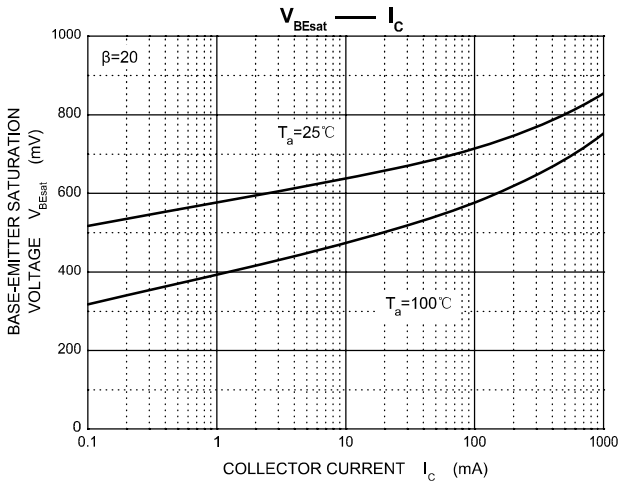
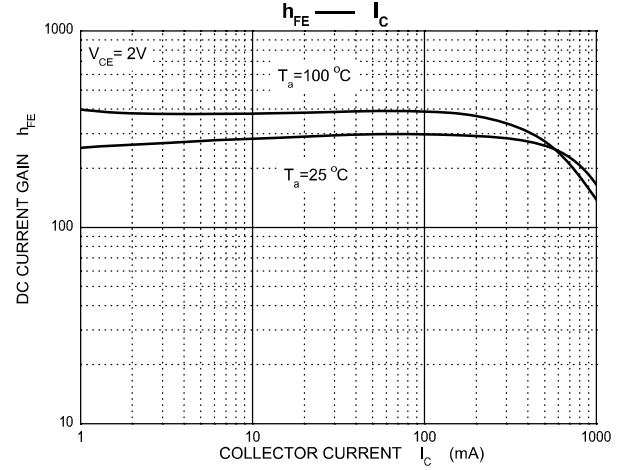
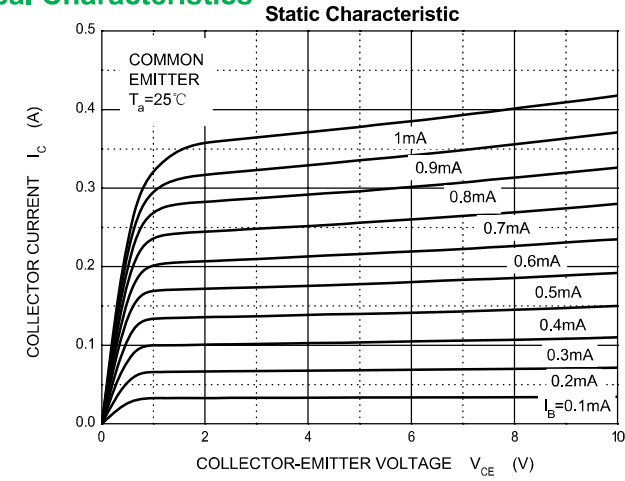
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	120			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 2mA, I_B = 0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 60V, I_E = 0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 6V, I_C = 0$			0.1	$\mu A$
DC current gain	$h_{FE1}$	$V_{CE} = 2V, I_C = 100mA$	135		600	
	$h_{FE2}$	$V_{CE} = 2V, I_C = 1A$	81			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 1A, I_B = 50mA$			0.3	V
Base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C = 1A, I_B = 50mA$			1.2	V
Base-emitter voltage *	$V_{BE}$	$V_{CE} = 2V, I_C = 50mA$	0.6		0.7	V
Transition frequency	$f_T$	$V_{CE} = 2V, I_C = 100mA$	100			MHz
Output capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$			19	pF
Turn on time	$t_{on}$	$V_{CC} = 10V, I_C = 100mA, I_{B1} = -I_{B2} = 10mA$		0.07		$\mu s$
Storage time	$t_s$			0.95		$\mu s$
Fall time	$t_f$			0.07		$\mu s$

\*pulse test:  $PW \leq 350\mu s, \delta \leq 2\%$ .

**CLASSIFICATION OF  $h_{FE1}$**

Rank	L	K	U
Range	135-270	200-400	300-600

Typical Characteristics



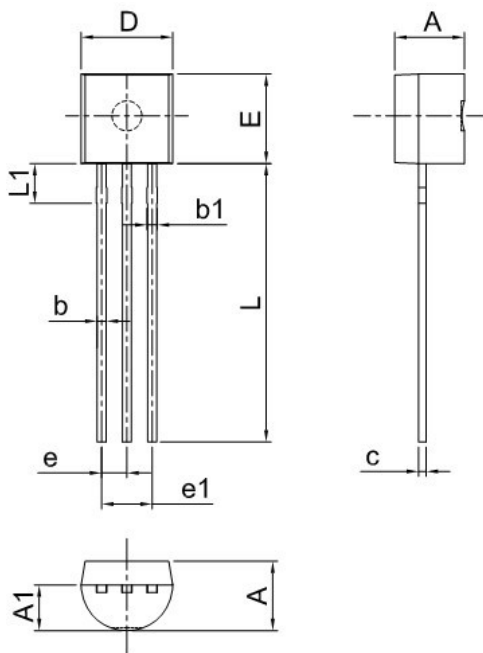
**Ordering information**

Package	Packing Description	Base Quantity
TO-92	Bulk	1000pcs/Bag
	Tape	2000pcs/Box

**Package Dimensions**

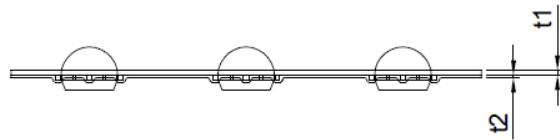
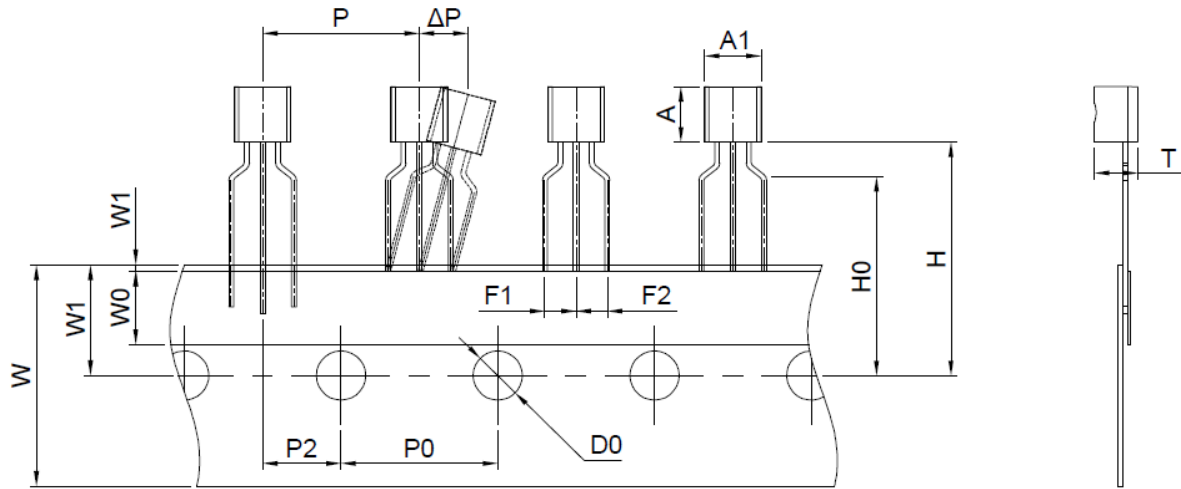
**TO-92**

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	3.30	3.70	0.130	0.146
A1	2.30	2.70	0.091	0.106
b	0.40	0.50	0.016	0.020
b1	0.50	0.70	0.020	0.028
c	0.35	0.45	0.014	0.018
D	4.45	4.70	0.175	0.185
E	4.40	4.65	0.173	0.183
e	1.17	1.37	0.046	0.054
e1	2.34	2.64	0.092	0.104
L	13.50	14.50	0.531	0.571
L1	1.80	2.20	0.071	0.087

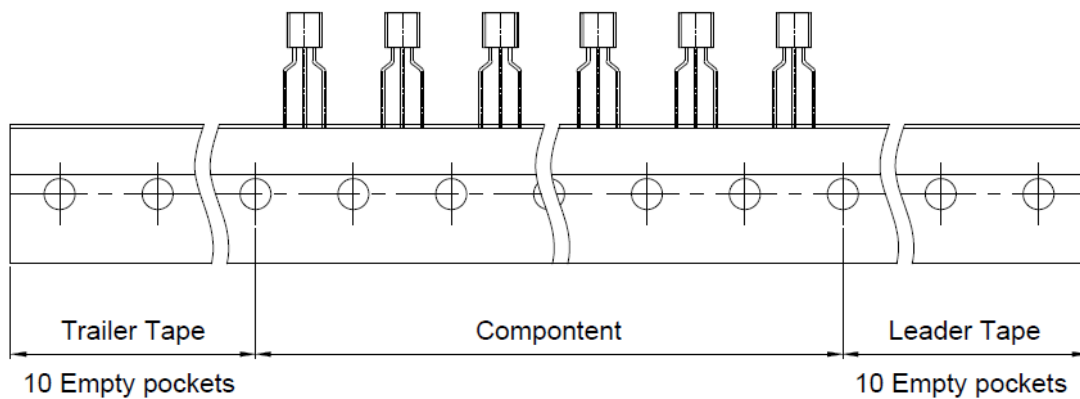


Taping Dimensions

TO-92



Dimensions are in millimeter								
A	A1	T	P	P0	P2	F1	F2	W
4.6	4.6	3.5	12.7	12.7	6.35	2.54	2.54	18.0
W0	W1	W2	H	H0	D0	t1	T2	ΔP
6.0	9.0	1.0Max	19.0	18.0	4.0	0.4	0.2	0



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