



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

MPSA13

TECHNICAL SPECIFICATIONS OF NPN DARLINGTON TRANSISTOR

Description

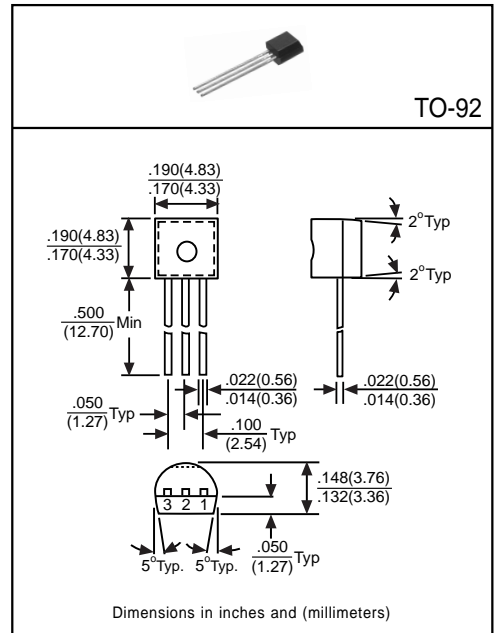
Designed for applications requiring extremely high current gain.

Pinning

- 1 = Emitter
- 2 = Base
- 3 = Collector

Absolute Maximum Ratings(T_A=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V _{CB0}	30	V
Collector-Emitter Voltage	V _{CES}	30	V
Emitter-Base Voltage	V _{EBO}	10	V
Collector Current	I _C	500	mA
Total Power Dissipation	P _D	600	mW
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-55 to +150	°C



Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	BV _{CB0}	30	-	-	V	I _C =100μA, I _E =0
Collector-Emitter Breakdown Voltage	BV _{CES}	30	-	-	V	I _C =0.1mA, V _{BE} =0
Emitter-Base Breakdown Voltage	BV _{EBO}	10	-	-	V	I _E =10μA, I _C =0
Collector Cutoff Current	I _{CB0}	-	-	0.1	μA	V _{CB} =30V, I _E =0
Emitter Cutoff Current	I _{EBO}	-	-	0.1	μA	V _{EB} =10V, I _C =0
Collector-Emitter Saturation Voltage ⁽¹⁾	V _{CE(sat)1}	-	-	1.5	V	I _C =100mA, I _B =0.1mA
	V _{CE(sat)2}	-	1	-	V	I _C =500mA, I _B =0.5mA
DC Current Gain ⁽¹⁾	h _{FE1}	5K	-	-	-	I _C =10mA, V _{CE} =5V
	h _{FE2}	10K	-	-	-	I _C =100mA, V _{CE} =5V
	h _{FE3}	-	50K	-	-	I _C =500mA, V _{CE} =5V
Transition Frequency	f _T	125	-	-	MHz	I _C =10mA, V _{CE} =5V, f=100MHz
Output Capacitance	C _{ob}	-	-	6	pF	V _{CB} =10V, f=1MHz

(1)Pulse Test: Pulse Width ≤ 380μs, Duty Cycle ≤ 2%