



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

MID122

TECHNICAL SPECIFICATIONS OF NPN DARLINGTON TRANSISTOR

Description

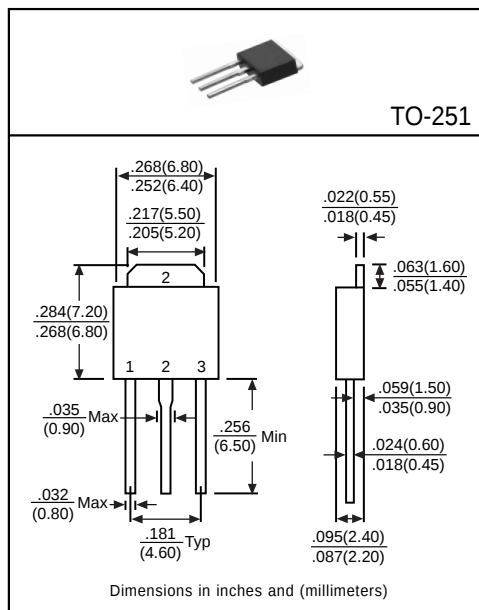
Designed for use in general purpose amplifier and low speed switching applications.

Pinning

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

Absolute Maximum Ratings($T_A=25^{\circ}\text{C}$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	100	V
Collector-Emitter Voltage	V_{CE0}	100	V
Emitter-Base Voltage	V_{EB0}	5	V
Collector Current	I_C	8	A
Total Power Dissipation($T_C=25^{\circ}\text{C}$)	P_D	20	W
Junction Temperature	T_J	+150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}\text{C}$



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}	100	-	-	V	$I_C=1\text{mA}$
Collector-Emitter Breakdown Voltage	BV_{CE0}	100	-	-	V	$I_C=30\text{mA}$
Emitter-Base Breakdown Voltage	BV_{EB0}	5	-	-	V	$I_E=1\text{mA}$
Collector Cutoff Current	I_{CB0}	-	-	10	μA	$V_{CB}=100\text{V}$
	I_{CE0}	-	-	10	μA	$V_{CE}=50\text{V}$
Emitter Cutoff Current	I_{EB0}	-	-	2	mA	$V_{EB}=5\text{V}$
Collector-Emitter Saturation Voltage ⁽¹⁾	$V_{CE(sat)1}$	-	-	2	V	$I_C=4\text{A}, I_B=16\text{mA}$
	$V_{CE(sat)2}$	-	-	4	V	$I_C=8\text{A}, I_B=80\text{mA}$
Base-Emitter Saturation Voltage ⁽¹⁾	$V_{BE(sat)}$	-	-	4.5	V	$I_C=8\text{A}, I_B=80\text{mA}$
Base-Emitter On Voltage ⁽¹⁾	$V_{BE(on)}$	-	-	2.8	V	$I_C=4\text{A}, V_{CE}=4\text{V}$
DC Current Gain ⁽¹⁾	h_{FE1}	1K	-	12K	-	$I_C=4\text{A}, V_{CE}=4\text{V}$
	h_{FE2}	100	-	-	-	$I_C=8\text{A}, V_{CE}=4\text{V}$
Output Capacitance	C_{ob}	-	130	-	pF	$V_{CB}=10\text{V}, f=1\text{MHz}$

(1) Pulse Test: Pulse Width $\leq 380\mu\text{s}$, Duty Cycle $\leq 2\%$