



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

MID112

TECHNICAL SPECIFICATIONS OF NPN DARLINGTON TRANSISTOR

Description

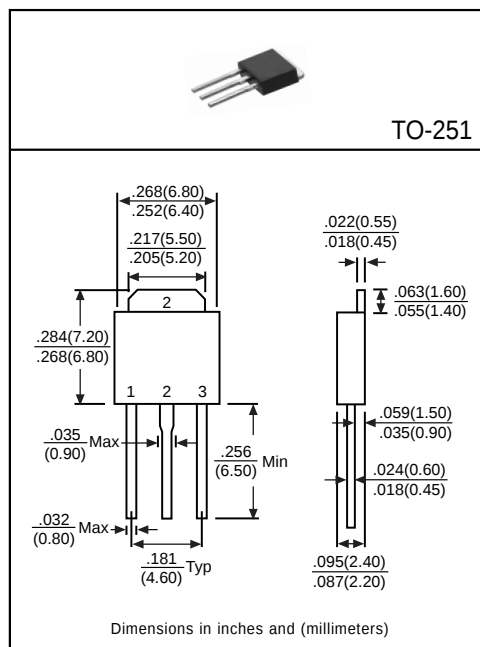
Designed for general purpose power and switching such as output or driver stages in applications such as switching regulators, converters, and amplifiers.

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	2	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	$I_C=30\text{mA}$
Collector Cutoff Current	I_{CB0}	-	-	10	μA	$V_{CB}=80\text{V}$
	I_{CE0}	-	-	20	μA	$V_{CE}=50\text{V}$
Emitter Cutoff Current	I_{EB0}	-	-	2	mA	$V_{BE}=5\text{V}$
Collector-Emitter Saturation Voltage ⁽¹⁾	$V_{CE(sat)}$	-	-	2.5	V	$I_C=2\text{A}$, $I_B=8\text{mA}$
Base-Emitter On Voltage ⁽¹⁾	$V_{BE(on)}$	-	-	2.8	V	$I_C=2\text{A}$, $V_{CE}=3\text{V}$
DC Current Gain ⁽¹⁾	h_{FE1}	500	-	-	-	$I_C=0.5\text{A}$, $V_{CE}=3\text{V}$
	h_{FE2}	1K	-	12K	-	$I_C=2\text{A}$, $V_{CE}=3\text{V}$
	h_{FE3}	200	-	-	-	$I_C=4\text{A}$, $V_{CE}=3\text{V}$
Output Capacitance	C_{ob}	-	-	100	pF	$V_{CB}=10\text{V}$

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