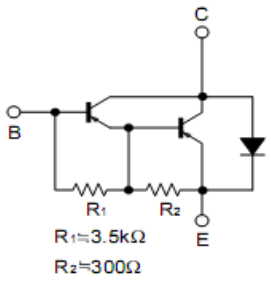
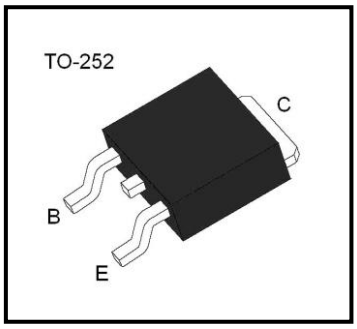
Darlington Transistor

Features

- Darlington connection for high DC current gain.
- Built-in resistor between base and emitter.
- Built-in damper diode.
- Complementary to 2SD1980





Absolute Maximum Rating (Ta=25℃)

Parameter		Symbol	Value	Unit
Collector-Base Voltage		BV_{CBO}	-100	V
Collector-Emitter Voltage		BV_{CEO}	-100	V
Emitter-Base Voltage		BV_{EBO}	-8	V
Collector Current (DC)		I_C	-2	A
Collector Current (Pluse)		I_{CP}	-3	A
Collector Dissipation	Ta =25 ℃	P_C	1	W
	Tc =25 ℃		10	
Junction Temperature		T_j	150	℃
Storage Temperature		T_{stg}	-55～150	℃

Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	I_C = -50μA, I_E = 0	-100			
Collector-emitter breakdown voltage	BV_{CEO}	I_C = -5mA, I_B = 0	-100			
Emitter-base breakdown voltage	BV_{EBO}	I_E = -5mA, I_C = 0	-8			
Collector-base cut-off current	I_{CBO}	V_{CB} = -100V, I_E = 0			-10	μA
Emitter-emitter cut-off current	I_{EBO}	V_{EB} = -7V, I_C = 0			-3	mA
DC current gain *	h_{FE}	V_{CE} = -0, I_C = -1	1000			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	I_C = -1, I_B = -1mA			-15	V
Transition frequency	f_T	V_{CE} = -5, I_C = -0.1		50		MHz
Output Capacitance	C_{ob}	V_{CB}=-10V,I_E=0,f= 0.1MHz		35		pF

* Pulse Test : PW≤300μs, Duty cycle≤2%

Typical Characteristics

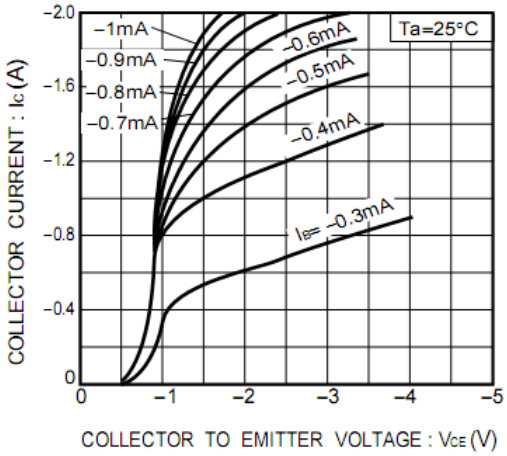


Figure 1. Static Characteristic

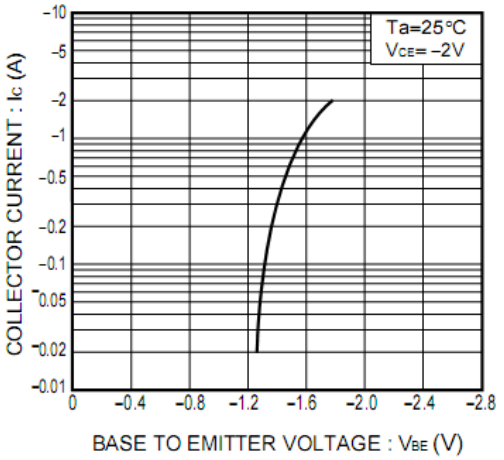


Figure 2. Grounded emitter propagation

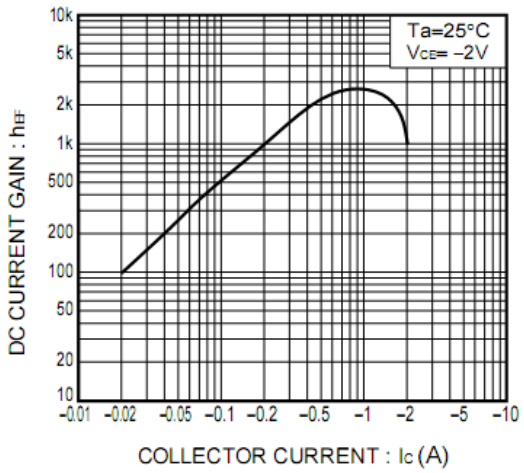


Figure 3. DC current Gain

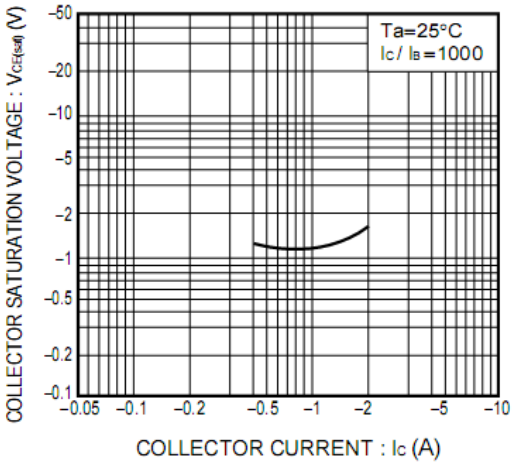


Figure 4. Collector-Emitter Saturation Voltage

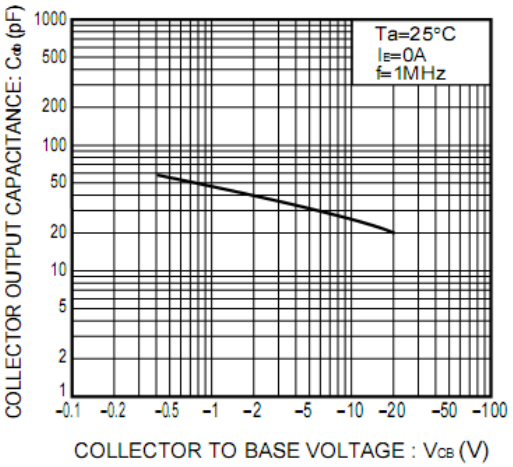


Figure 5. Collector Output Capacitance

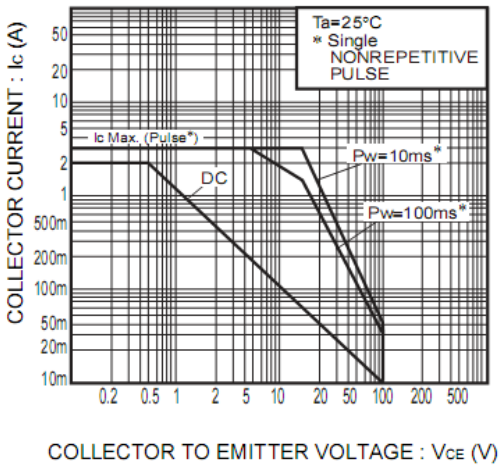
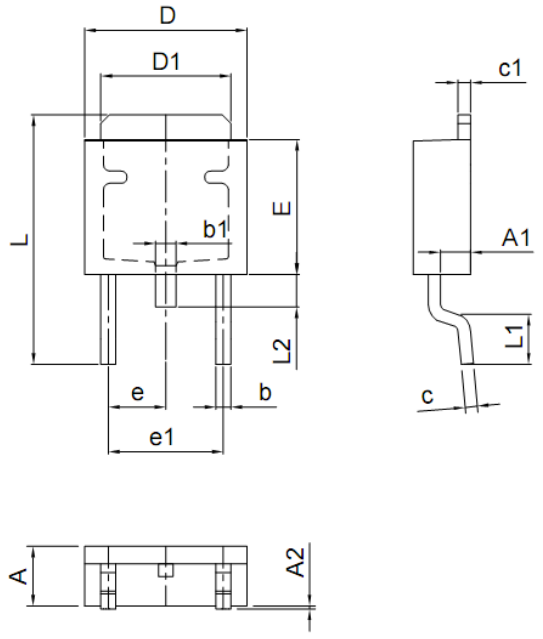


Figure 6. Safe Operating area

Package Dimensions



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.094
A1	1.00	1.40	0.039	0.055
A2	0.00	0.15	0.000	0.006
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.20	6.70	0.244	0.264
D1	5.10	5.50	0.201	0.217
E	5.50	6.00	0.217	0.236
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	9.70	10.40	0.382	0.409
L1	1.40	1.70	0.055	0.063
L2	0.60	1.20	0.024	0.047