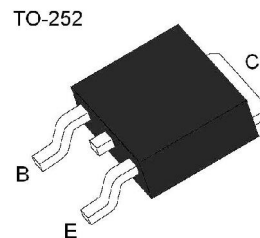
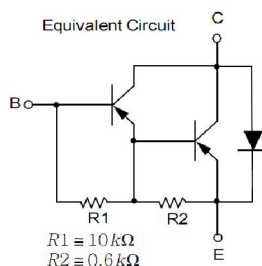




## Darlington Transistor

### Medium Power Linear Switching Applications

- Complementary to MJD112



### Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Value	Unit	
Collector-Base Voltage	$V_{CBO}$	-100	V	
Collector-Emitter Voltage	$V_{CEO}$	-100	V	
Emitter-Base Voltage	$V_{EBO}$	-5	V	
Collector Current(DC)	$I_C$	-3	A	
Collector Dissipation	$P_C$	$T_c = 25\text{ }^\circ\text{C}$	20	W
		$T_a = 25\text{ }^\circ\text{C}$	1.75	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$	
Storage Temperature	$T_{stg}$	-65~150	$^\circ\text{C}$	

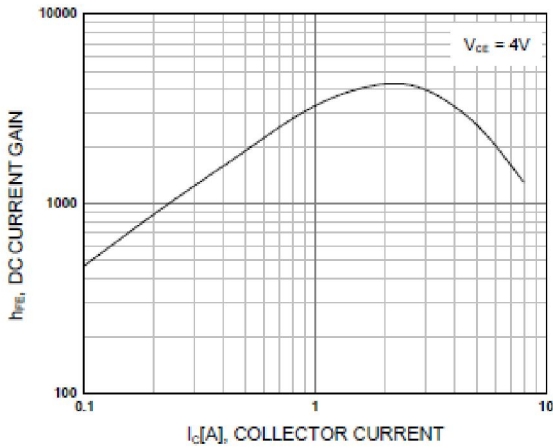
### Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = -30\text{mA}, I_B = 0$	-100			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -100\text{V}, I_E = 0$			-0.2	mA
Collector cut-off current	$I_{CEO}$	$V_{CE} = -50\text{V}, I_E = 0$			-0.5	mA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5\text{V}, I_C = 0$			-0.2	mA
* DC current gain	$h_{FE}$	$V_{CE} = -3\text{V}, I_C = -0.5\text{A}$ $V_{CE} = -3\text{V}, I_C = -3\text{A}$	1000 1000			
*Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -3\text{A}, I_B = -12\text{mA}$ $I_C = -5\text{A}, I_B = -20\text{mA}$			-2 -4	V
* Base-Emitter ON Voltage	$V_{BE(on)}$	$V_{CE} = -3\text{V}, I_C = -3\text{A}$			-2.5	V
Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$			100	pF

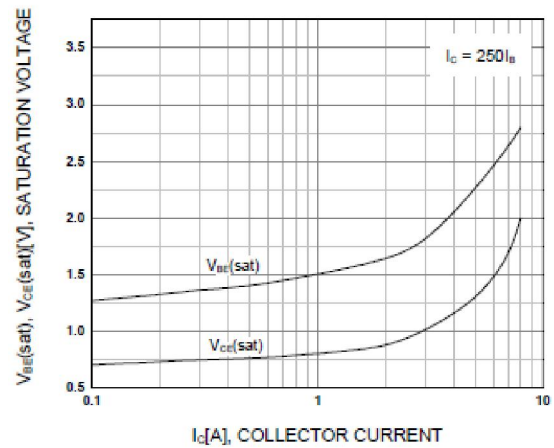
\* Pulse Test :  $PW \leq 300\mu\text{s}$ , Duty cycle  $\leq 2\%$



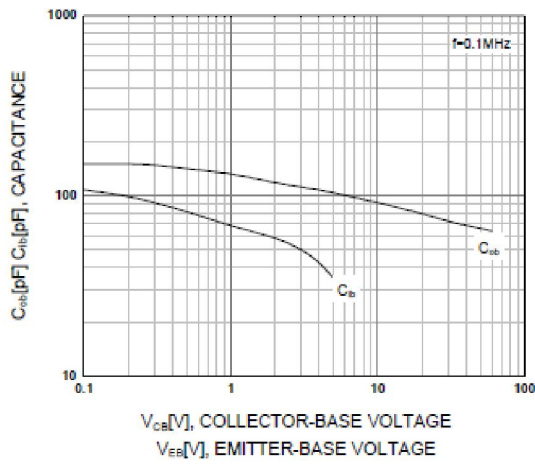
**Typical characteristic**



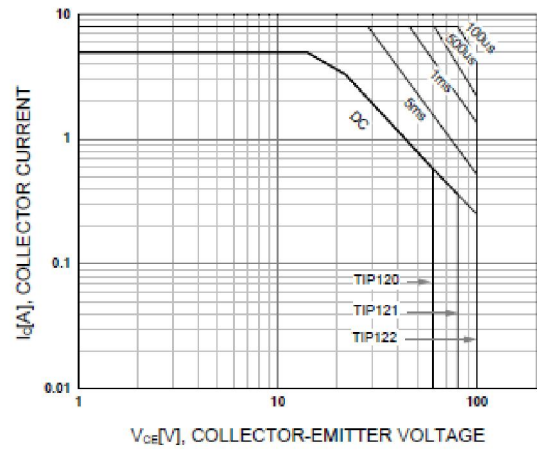
**Figure 1. DC current Gain**



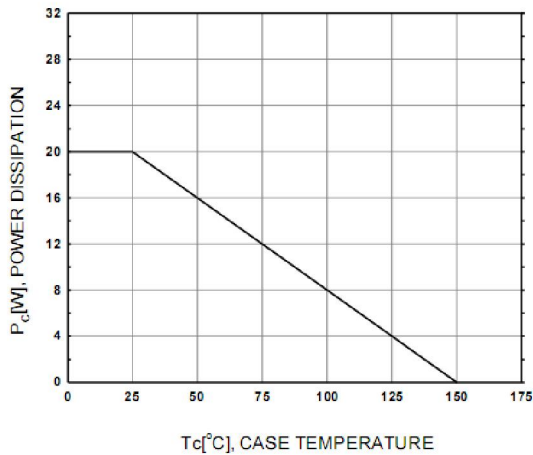
**Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Figure 3. Output and Input Capacitance  
vs. Reverse Voltage**



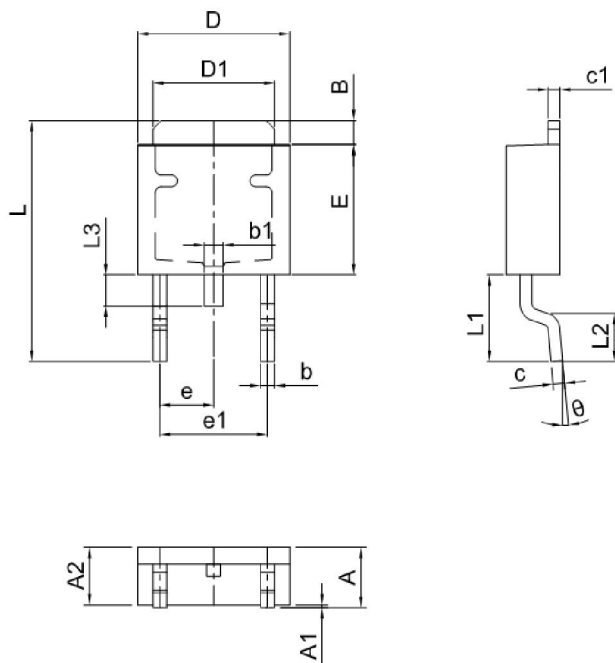
**Figure 4. Safe Operating Area**



**Figure 5. Power Derating**



**TO-252 Package Dimensions**



DIM	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.098
A1	0.00	0.12	0.000	0.005
A2	2.20	2.40	0.087	0.094
B	1.20	1.60	0.047	0.063
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	6.35	6.65	0.250	0.262
D1	5.20	5.40	0.205	0.213
E	5.40	5.70	0.213	0.224
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	9.60	10.20	0.378	0.402
L1	2.70	3.10	0.106	0.122
L2	1.40	1.80	0.055	0.071
L3	0.90	1.50	0.035	0.059
theta	0°	8°	0°	8°