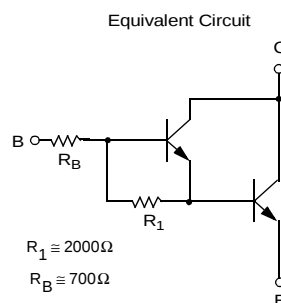
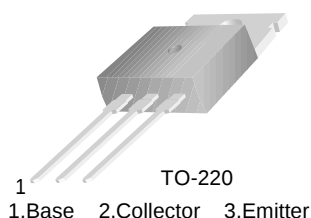


699440

High Voltage Power Darlington Transistor

Features

- Built-in Resistor at Base-Emitter: $R_1(\text{Typ.}) = 2000\Omega$
- Built-in Resistor at Base: $R_B(\text{Typ.}) = 700\pm 100\Omega$



Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	275	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current (DC)	4	A
I_{CP}	* Collector Current (Pulse)	6	A
I_B	Base Current (DC)	0.5	A
P_C	Collector Dissipation ($T_C = 25^\circ\text{C}$)	40	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

* Pulse Test: $PW = 300\mu\text{s}$, Duty Cycle = 2% Pulsed

Electrical Characteristics $T_C = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 500\mu\text{A}$, $I_E = 0$	600			V
BV_{CER}	Collector-Emitter Breakdown Voltage	$I_C = 1\text{mA}$, $R_{BE} = 330\Omega$	600			V
$BV_{CEO(sus)}$	Collector-Emitter Sustaining Voltage	$I_C = 1.5\text{A}$, $I_B = 50\text{mA}$, $L = 25\text{mH}$	275			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 500\mu\text{A}$, $I_C = 0$	10			V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 600\text{V}$, $I_E = 0$			0.1	mA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 10\text{V}$, $I_C = 0$			0.1	mA
h_{FE}	DC Current Gain	$V_{CE} = 5\text{V}$, $I_C = 0.5\text{A}$ $V_{CE} = 5\text{V}$, $I_C = 3\text{A}$	1000 1000		5000	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 3\text{A}$, $I_B = 20\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 2\text{A}$, $I_B = 5\text{mA}$			6.0	V
C_{ob}	Output Capacitance	$V_E = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		110		pF

Typical Performance Characteristics

Figure 1. Static Characteristic

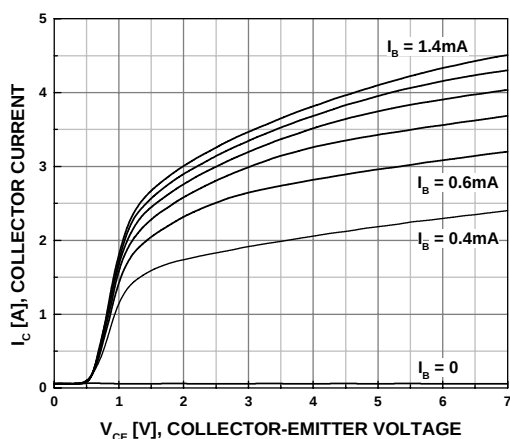


Figure 2. DC Current Gain

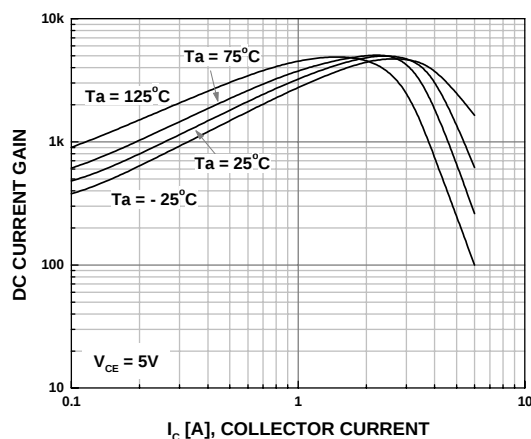


Figure 3. Collector-Emitter Saturation Voltage

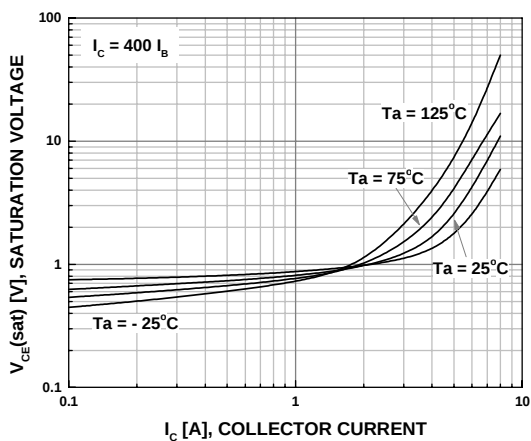


Figure 4. Base-Emitter Saturation Voltage

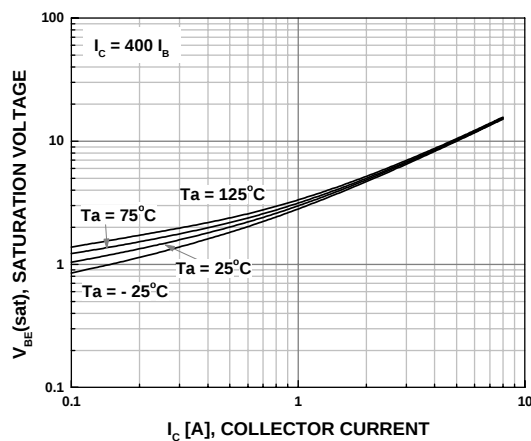


Figure 5. R_B & R_1 vs. Ambient Temperature

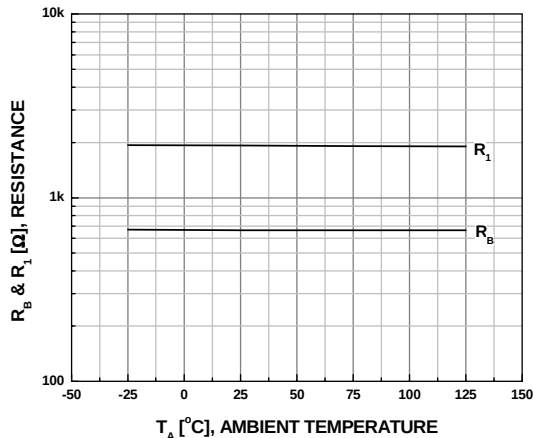
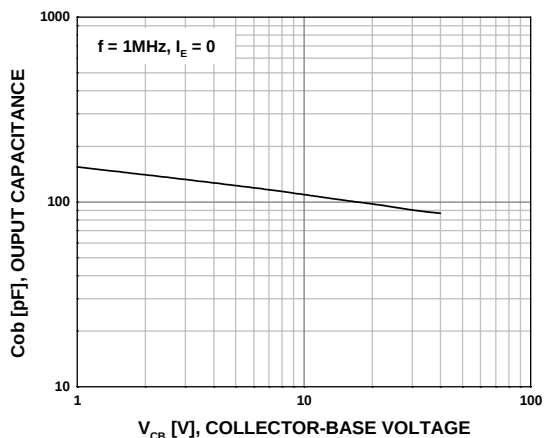
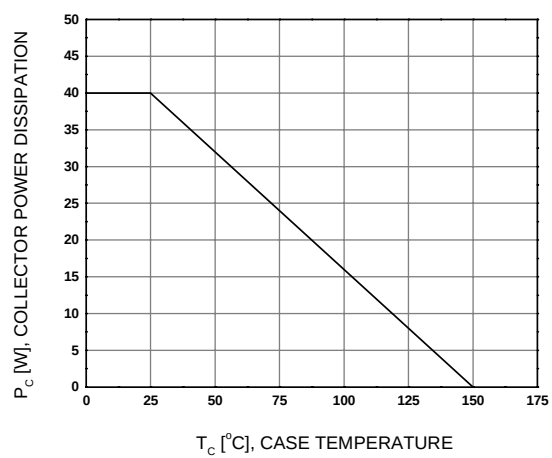


Figure 6. Output Capacitance



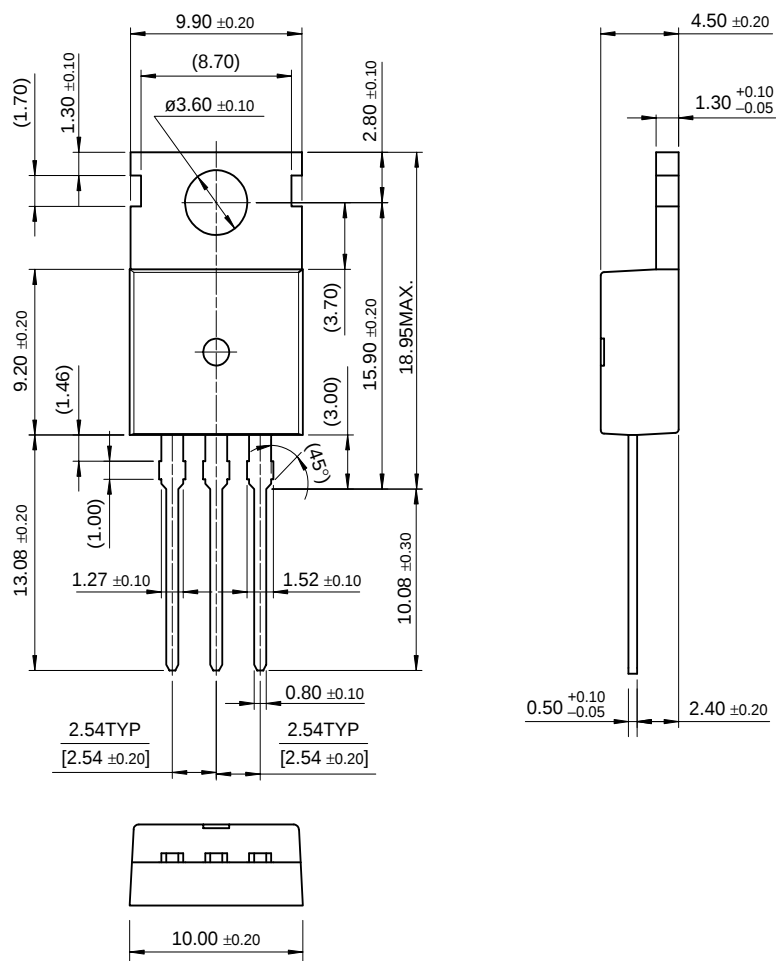
Typical Performance Characteristics (Continued)

Figure 6. Power Derating



Mechanical Dimensions

TO-220



Dimensions in Millimeters

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