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2N6034/35/36
 2N6037/38/39

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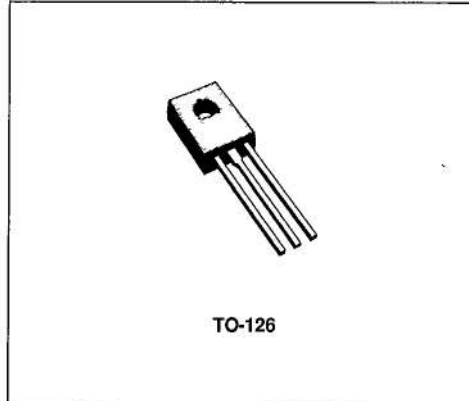
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MEDIUM POWER DARLINGTONS

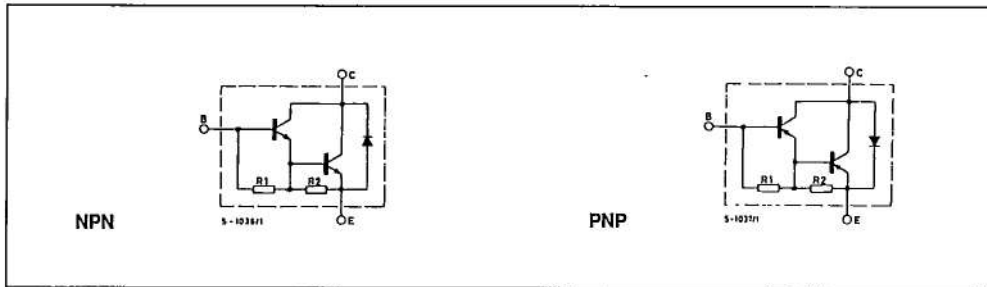
DESCRIPTION

The 2N6037, 2N6038 and 2N6039 are silicon epitaxial-base NPN power transistors in monolithic Darlington configuration and are mounted in Jedec TO-126 plastic package.

The complementary PNP types are the 2N6034, 2N6035 and 2N6036 respectively.



INTERNAL SCHEMATIC DIAGRAMS



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	PNP NPN	2N6034	2N6035	2N6036	Unit
			2N6037	2N6038	2N6039	
V_{CBO}	Collector-base Voltage ($I_E = 0$)		40	60	80	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)		40	60	80	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)			5		V
I_C	Collector Current			4		A
I_{CM}	Collector Peak Current			8		A
I_B	Base Current			100		mA
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^\circ C$			40		W
T_{stg}	Storage Temperature			- 65 to 150		$^\circ C$
T_J	Junction Temperature			150		$^\circ C$

2N6034/35/37-2N6037/38/39

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THERMAL DATA

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$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	3.12	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	83.3	°C/W

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

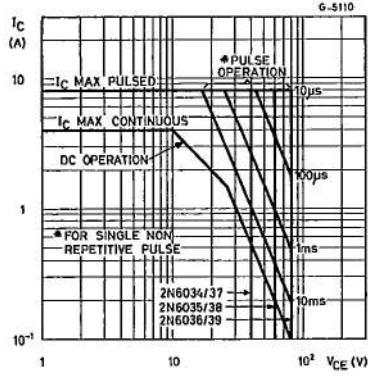
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Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	for 2N6034/37 $V_{CE} = 40V$ for 2N6035/38 $V_{CE} = 60V$ for 2N6036/39 $V_{CE} = 80V$			100 100 100	μA μA μA
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	for 2N6034/37 $V_{CE} = 40V$ for 2N6035/38 $V_{CE} = 60V$ for 2N6036/39 $V_{CE} = 80V$			100 100 100	μA μA μA
I_{CEX}	Collector Cutoff Current ($V_{EB} = 1.5V$)	for 2N6034/37 $V_{CE} = 40V$ for 2N6035/38 $V_{CE} = 60V$ for 2N6036/39 $V_{CE} = 80V$ $T_{case} = 125^{\circ}C$ for 2N6034/37 $V_{CE} = 40V$ for 2N6035/38 $V_{CE} = 60V$ for 2N6036/39 $V_{CE} = 80V$			0.1 0.1 0.1 0.5 0.5 0.5	mA mA mA mA mA mA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 5V$			2	mA
$V_{CEO(sus)^*}$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 100mA$ for 2N6034/37 for 2N6035/38 for 2N6036/39	40 60 80			V V V
$V_{CE(sat)^*}$	Collector-emitter Saturation Voltage	$I_C = 2A$ $I_B = 8mA$ $I_C = 4A$ $I_B = 40mA$			2 3	V V
$V_{BE(sat)^*}$	Base-emitter Saturation Voltage	$I_C = 4A$ $I_B = 40mA$			4	V
V_{BE}^*	Base-emitter Voltage	$I_C = 2A$ $V_{CE} = 3V$			2.8	V
h_{FE}^*	DC Current Gain	$I_C = 0.5A$ $V_{CE} = 3V$ $I_C = 2A$ $V_{CE} = 3V$ $I_C = 4A$ $V_{CE} = 3V$	500 750 100		15000	
h_{fe}	Small Signal Current Gain	$I_C = 0.75A$ $V_{CE} = 10V$ $f = 1MHz$	25			
C_{CBO}	Collector-base Capacitance	$V_{CB} = 10V$ $I_E = 0$ $f = 1MHz$			(*)100	

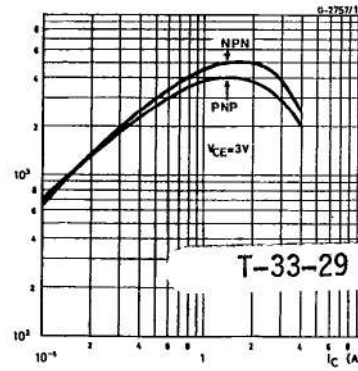
* Pulsed : pulse duration = 300 μs , duty cycle $\leq 1.5\%$.

(*) for PNP types 200pF.

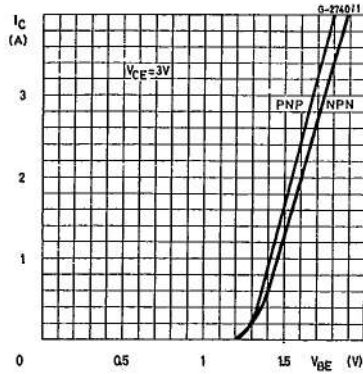
Safe Operating Areas.



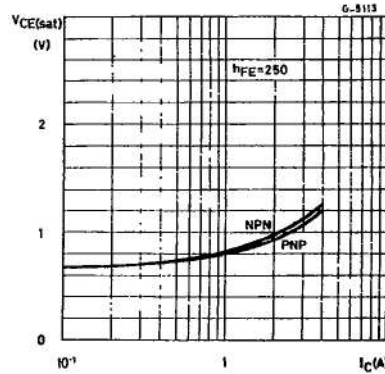
DC Current Gain.



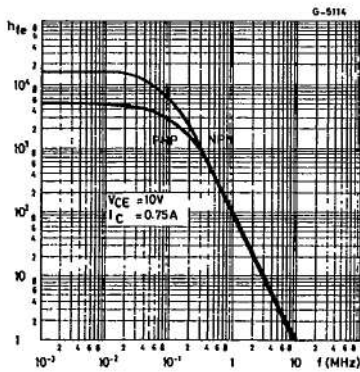
DC Transconductance



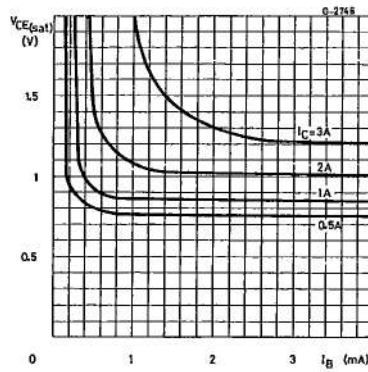
Collector-emitter Saturation Vol-



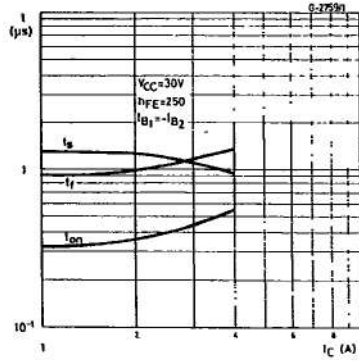
Small Signal Current Gain.



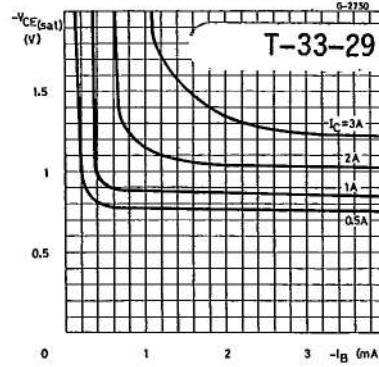
Collector-emitter Saturation Voltage (NPN).



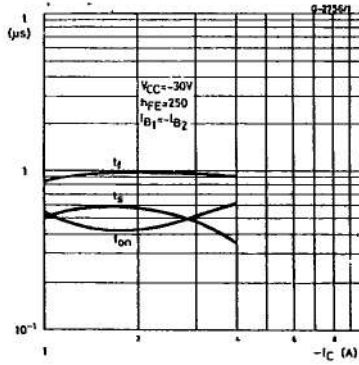
Saturated Switching Characteristics (NPN).



Collector-emitter Saturation Voltage (PNP).



Saturated Switching Characteristics (PNP).



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