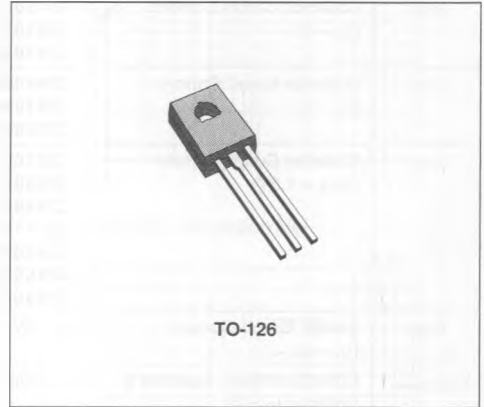


MEDIUM POWER DARLINGTONS

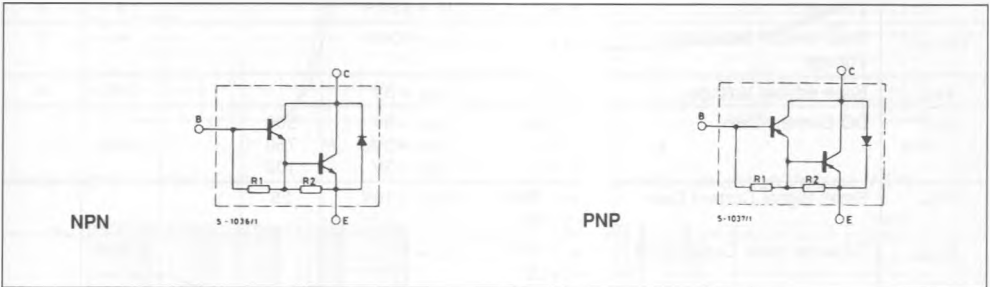
DESCRIPTION

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		Unit
		2N6034	2N6035	2N6037	2N6038	
V_{CBO}	Collector-base Voltage ($I_E = 0$)	40	60	40	80	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	40	60	40	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_{101}	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				$^\circ C$

THERMAL DATA

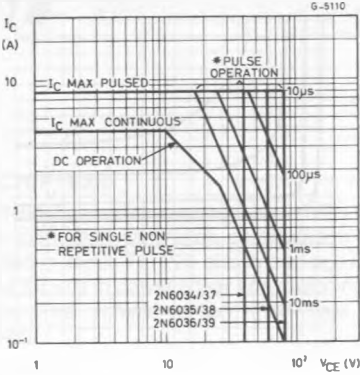
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	3.12	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	83.3	°C/W

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

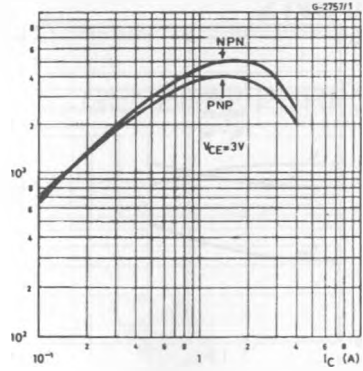
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	for 2N6034/37 $V_{CE} = 40V$ for 2N6035/38 $V_{CE} = 60V$ for 2N6036/39 $V_{CE} = 80V$			100 100 100	μA μA μA
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	for 2N6034/37 $V_{CE} = 40V$ for 2N6035/38 $V_{CE} = 60V$ 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.

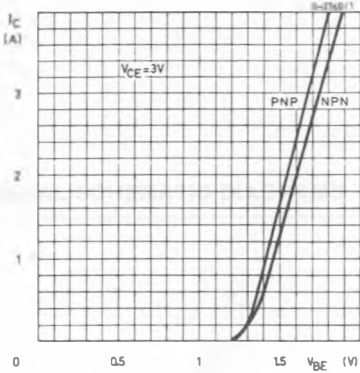
Safe Operating Areas.



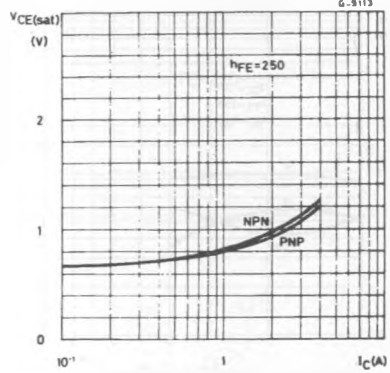
DC Current Gain.



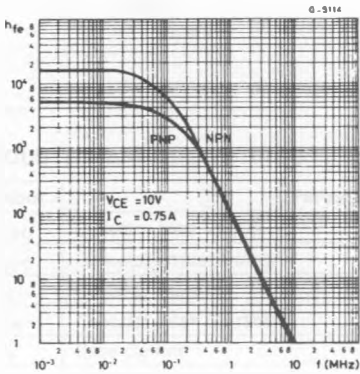
DC Transconductance



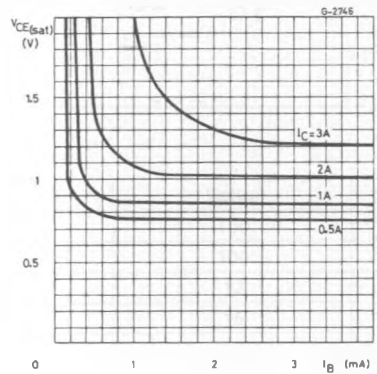
Collector-emitter Saturation Vol-



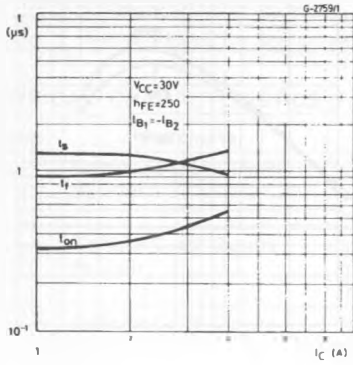
Small Signal Current Gain.



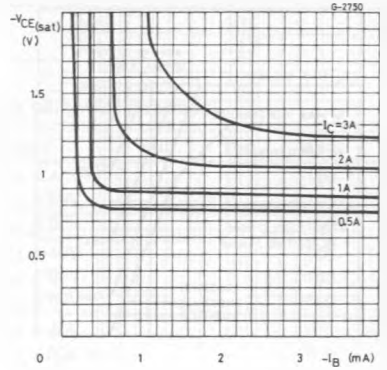
Collector-emitter Saturation Voltage (NPN).



Saturated Switching Characteristics (NPN).



Collector-emitter Saturation Voltage (PNP).



Saturated Switching Characteristics (PNP).

