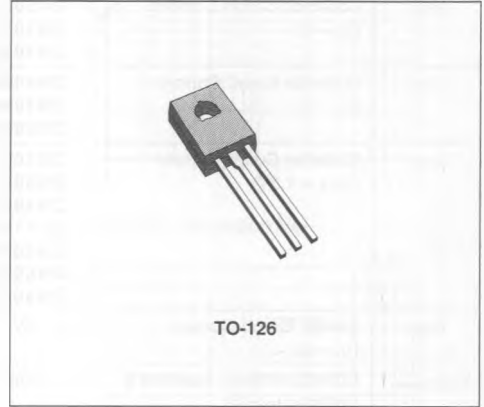


## MEDIUM POWER DARLINGTONS

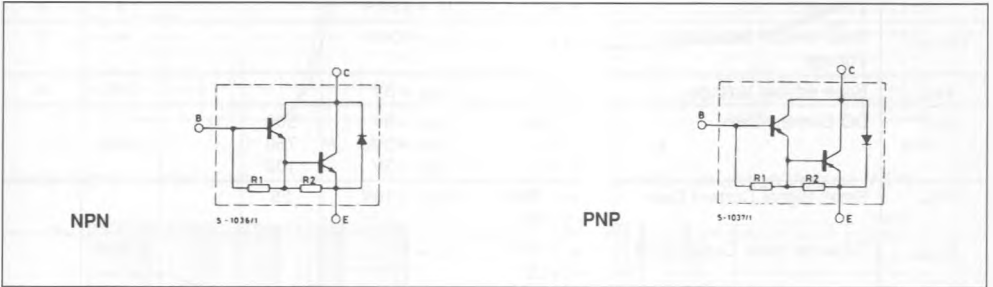
### DESCRIPTION

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
$P_{T01}$	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**

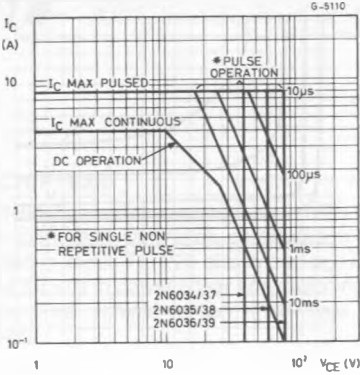
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	3.12	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	83.3	°C/W

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

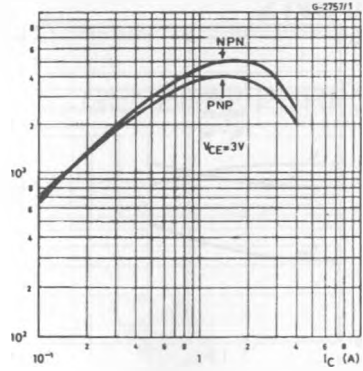
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cutoff Current ( $I_E = 0$ )	for <b>2N6034/37</b> $V_{CE} = 40V$ for <b>2N6035/38</b> $V_{CE} = 60V$ for <b>2N6036/39</b> $V_{CE} = 80V$			100 100 100	$\mu A$ $\mu A$ $\mu A$
$I_{CEO}$	Collector Cutoff Current ( $I_B = 0$ )	for <b>2N6034/37</b> $V_{CE} = 40V$ for <b>2N6035/38</b> $V_{CE} = 60V$ for <b>2N6036/39</b> $V_{CE} = 80V$			100 100 100	$\mu A$ $\mu A$ $\mu A$
$I_{CEX}$	Collector Cutoff Current ( $V_{EB} = 1.5V$ )	for <b>2N6034/37</b> $V_{CE} = 40V$ for <b>2N6035/38</b> $V_{CE} = 60V$ for <b>2N6036/39</b> $V_{CE} = 80V$ $T_{case} = 125^{\circ}C$ for <b>2N6034/37</b> $V_{CE} = 40V$ for <b>2N6035/38</b> $V_{CE} = 60V$ for <b>2N6036/39</b> $V_{CE} = 80V$			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 <b>2N6034/37</b> for <b>2N6035/38</b> for <b>2N6036/39</b>	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 $\mu s$ , duty cycle  $\leq$  1.5%.  
(\*) for PNP types 200pF.

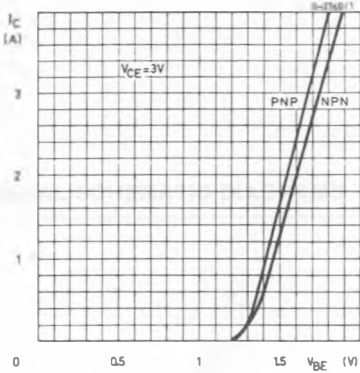
Safe Operating Areas.



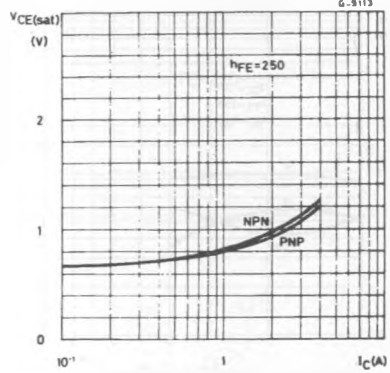
DC Current Gain.



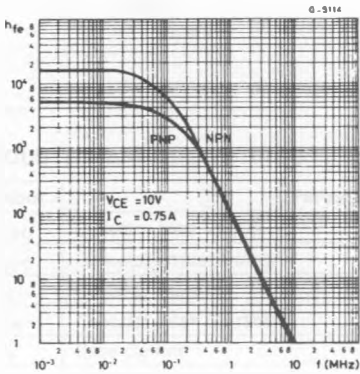
DC Transconductance



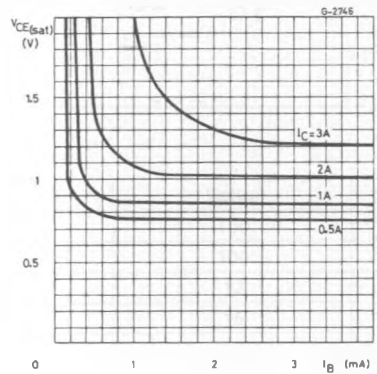
Collector-emitter Saturation Vol-



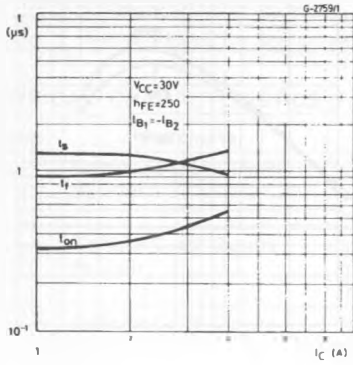
Small Signal Current Gain.



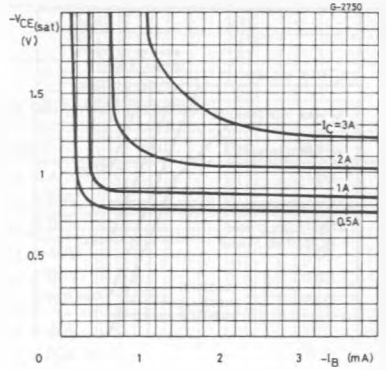
Collector-emitter Saturation Voltage (NPN).



Saturated Switching Characteristics (NPN).



Collector-emitter Saturation Voltage (PNP).



Saturated Switching Characteristics (PNP).

