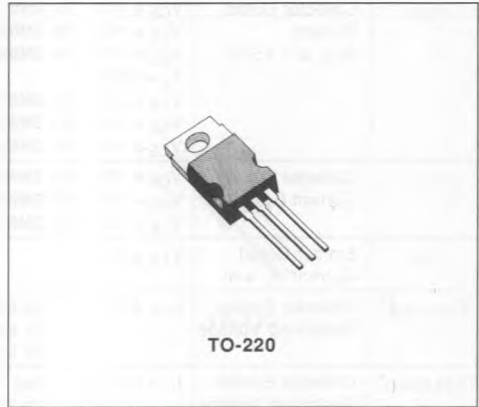


GENERAL PURPOSE COMPLEMENTARY PAIRS

**DESCRIPTION**

The 2N6107, 2N6109, 2N6111, 2N6288, 2N6290 and 2N6292 are epitaxial-base silicon transistors in Jedec TO-220 plastic package. They are intended for a wide variety of medium power switching and linear applications.

The PNP types are the 2N6107, 2N6109, 2N6111 and their complementary NPN types are the 2N6292, 2N6290 and 2N6288 respectively.



**INTERNAL SCHEMATIC DIAGRAMS**



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	PNP	2N6107	2N6109	2N6111	Unit
		NPN	2N6292	2N6290	2N6288	
V <sub>CBO</sub>	Collector-base Voltage (I <sub>E</sub> = 0)		80	60	40	V
V <sub>CEX</sub>	Collector-emitter Voltage (R <sub>BE</sub> = 100 Ω)		80	60	40	V
V <sub>CEO</sub>	Collector-emitter Voltage (I <sub>B</sub> = 0)		70	50	30	V
V <sub>EBO</sub>	Emitter-base Voltage (I <sub>C</sub> = 0)			5		V
I <sub>C</sub>	Collector Current			7		A
I <sub>B</sub>	Base Current			3		A
P <sub>tot</sub>	Total Power Dissipation at T <sub>case</sub> ≤ 25 °C			40		W
T <sub>stg</sub>	Storage Temperature			- 65 to 150		°C
T <sub>j</sub>	Junction Temperature			150		°C

For PNP devices voltage and current values are negative.

## THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	3.12	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	70	$^{\circ}C/W$

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
$I_{CEX}$	Collector Cutoff Current ( $V_{BE} = -1.5V$ )	$V_{CE} = 40V$ for 2N6111/2N6288			0.1	mA	
		$V_{CE} = 60V$ for 2N6109/2N6290			0.1	mA	
		$V_{CE} = 80V$ for 2N6107/2N6292			0.1	mA	
		$T_C = 150^{\circ}C$					
		$V_{CE} = 30V$ for 2N6111/2N6288				2	mA
		$V_{CE} = 50V$ for 2N6109/2N6290				2	mA
$I_{CEO}$	Collector Cutoff Current ( $I_B = 0$ )	$V_{CE} = 20V$ for 2N6111/2N6288			1	mA	
		$V_{CE} = 40V$ for 2N6109/2N6290			1	mA	
		$V_{CE} = 60V$ for 2N6107/2N6292			1	mA	
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = 5V$			1	mA	
$V_{CEO(sus)}^*$	Collector Emitter Sustaining Voltage	$I_C = 0.1A$ for 2N6111/2N6288	30			V	
		for 2N6109/2N6290	50			V	
		for 2N6107/2N6292	70			V	
$V_{CER(sus)}^*$	Collector Emitter Sustaining Voltage	$I_C = 0.1A$ $R_{BE} = 100\ ohm$				V	
		for 2N6111/2N6288	40			V	
		for 2N6109/2N6290	60			V	
		for 2N6107/2N6292	80			V	
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 2A$ $I_B = 0.2A$ for 2N6111/2N6288			1	V	
		$I_C = 2.5A$ $I_B = 0.25A$ for 2N6109/2N6290			1	V	
		$I_C = 3A$ $I_B = 0.3A$ for 2N6107/2N6292			1	V	
		$I_C = 7A$ $I_B = 3A$			3.5	V	
$V_{BE(on)}^*$	Base-emitter Voltage	$I_C = 2A$ $V_{CE} = 4A$ for 2N6111/2N6288			1.5	V	
		$I_C = 2.5A$ $V_{CE} = 4A$ for 2N6109/2N6290			1.5	V	
		$I_C = 3A$ $V_{CE} = 4A$ for 2N6107/2N6292			1.5	V	
		$I_C = 7A$ $V_{CE} = 4A$			3	V	
$h_{FE}^*$	DC Current Gain	$I_C = 2A$ $V_{CE} = 4A$ for 2N6111/2N6288	30		150		
		$I_C = 2.5A$ $V_{CE} = 4A$ for 2N6109/2N6290	30		150		
		$I_C = 3A$ $V_{CE} = 4A$ for 2N6107/2N6292	30		150		
		$I_C = 7A$ $V_{CE} = 4A$	2.3				
$h_{fe}$	Small Signal Current Gain	$I_C = 0.5A$ $V_{CE} = 4V$ $f = 50\ KHz$	20				
$f_T$	Transition Frequency	$I_C = 0.5A$ $V_{CE} = 4V$ for NPN Types	10			MHz	
		$I_C = 0.5A$ $V_{CE} = 4V$ for PNP Types	4			MHz	
$C_{cbo}$	Collector-base Capacitance	$V_{CB} = 10V$ $f = 1\ MHz$			250	pF	

\* Pulsed : pulse duration = 300 $\mu$ s, duty cycle = 1.5 %.

For PNP types voltage and current values are negative.

For characteristic curves see the BD533 (NPN) and BD534 (PNP) series.