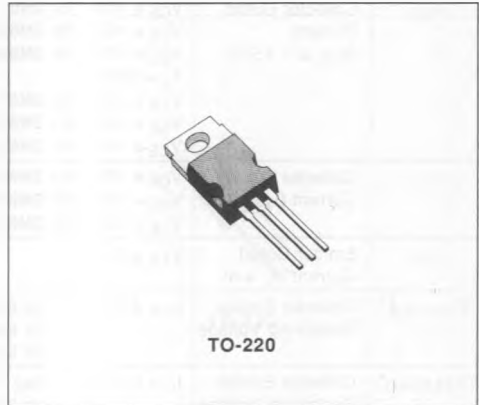


GENERAL PURPOSE COMPLEMENTARY PAIRS

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 _{CBO}	Collector-base Voltage (I _E = 0)		80	60	40	V
V _{CEX}	Collector-emitter Voltage (R _{BE} = 100 Ω)		80	60	40	V
V _{CEO}	Collector-emitter Voltage (I _B = 0)		70	50	30	V
V _{EBO}	Emitter-base Voltage (I _C = 0)			5		V
I _C	Collector Current			7		A
I _B	Base Current			3		A
P _{tot}	Total Power Dissipation at T _{case} ≤ 25 °C			40		W
T _{stg}	Storage Temperature			- 65 to 150		°C
T _j	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 ($V_{BE} = -1.5\ V$)	$V_{CE} = 40\ V$ for 2N6111/2N6288			0.1	mA	
		$V_{CE} = 60\ V$ for 2N6109/2N6290			0.1	mA	
		$V_{CE} = 80\ V$ for 2N6107/2N6292			0.1	mA	
		$T_C = 150^{\circ}C$					
		$V_{CE} = 30\ V$ for 2N6111/2N6288				2	mA
		$V_{CE} = 50\ V$ for 2N6109/2N6290				2	mA
$V_{CE} = 70\ V$ for 2N6107/2N6292				2	mA		
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	$V_{CE} = 20\ V$ for 2N6111/2N6288			1	mA	
		$V_{CE} = 40\ V$ for 2N6109/2N6290			1	mA	
		$V_{CE} = 60\ V$ for 2N6107/2N6292			1	mA	
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 5\ V$			1	mA	
$V_{CEO(sus)}^*$	Collector Emitter Sustaining Voltage	$I_C = 0.1\ A$ for 2N6111/2N6288	30			V	
		for 2N6109/2N6290	50			V	
		for 2N6107/2N6292	70			V	
$V_{CER(sus)}^*$	Collector Emitter Sustaining Voltage	$I_C = 0.1\ A$ $R_{BE} = 100\ ohm$				V	
			for 2N6111/2N6288	40			V
			for 2N6109/2N6290	60			V
			for 2N6107/2N6292	80			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 2\ A$ $I_B = 0.2\ A$ for 2N6111/2N6288			1	V	
		$I_C = 2.5\ A$ $I_B = 0.25\ A$ for 2N6109/2N6290			1	V	
		$I_C = 3\ A$ $I_B = 0.3\ A$ for 2N6107/2N6292			1	V	
		$I_C = 7\ A$ $I_B = 3\ A$			3.5	V	
$V_{BE(on)}^*$	Base-emitter Voltage	$I_C = 2\ A$ $V_{CE} = 4\ A$ for 2N6111/2N6288			1.5	V	
		$I_C = 2.5\ A$ $V_{CE} = 4\ A$ for 2N6109/2N6290			1.5	V	
		$I_C = 3\ A$ $V_{CE} = 4\ A$ for 2N6107/2N6292			1.5	V	
		$I_C = 7\ A$ $V_{CE} = 4\ A$			3	V	
h_{FE}^*	DC Current Gain	$I_C = 2\ A$ $V_{CE} = 4\ A$ for 2N6111/2N6288	30		150		
		$I_C = 2.5\ A$ $V_{CE} = 4\ A$ for 2N6109/2N6290	30		150		
		$I_C = 3\ A$ $V_{CE} = 4\ A$ for 2N6107/2N6292	30		150		
		$I_C = 7\ A$ $V_{CE} = 4\ A$	2.3				
h_{fe}	Small Signal Current Gain	$I_C = 0.5\ A$ $V_{CE} = 4\ V$ $f = 50\ KHz$	20				
f_T	Transition Frequency	$I_C = 0.5\ A$ $V_{CE} = 4\ V$ for NPN Types	10			MHz	
		$I_C = 0.5\ A$ $V_{CE} = 4\ V$ for PNP Types	4			MHz	
C_{cbo}	Collector-base Capacitance	$V_{CB} = 10\ V$ $f = 1\ MHz$			250	pF	

* Pulsed : pulse duration = 300 μ 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.