

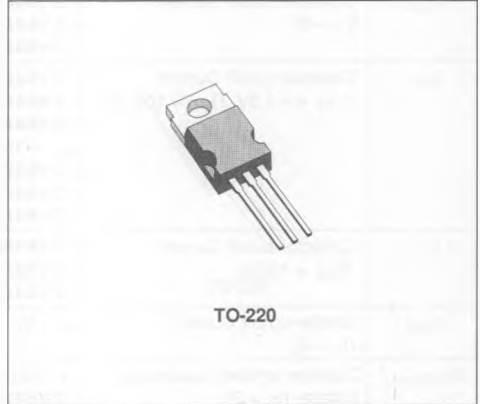
POWER LINEAR AND SWITCHING APPLICATIONS

DESCRIPTION

The 2N6486, 2N6487 and 2N6488 are silicon epitaxial-base NPN transistors mounted in Jedec TO-220 plastic package.

They are intended for use in power linear and switching applications.

The complementary PNP types are the 2N6489, 2N6490 and 2N6491 respectively.



INTERNAL SCHEMATIC DIAGRAMS



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	NPN PNP*			Unit
		2N6486 2N6489	2N6487 2N6490	2N6488 2N6491	
V_{CBO}	Collector-base Voltage ($I_E = 0$)	50	70	90	V
V_{CEX}	Collector-base Voltage ($V_{BE} = 1.5V$; $R_{BE} = 100\Omega$)	50	70	90	V
V_{CEO}	Collector-base Voltage ($I_B = 0$)	40	60	80	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	5			V
I_C	Collector Current	15			A
I_B	Base-current	5			A
P_{Tot}	Total Power Dissipation at $T_{case} \leq 25^\circ C$ $T_{case} \leq 25^\circ C$	75			W
		1.8			W
T_{stg}	Storage Temperature	- 65 to 150			$^\circ C$
T_j	Junction Temperature	150			$^\circ C$

* For NPN types voltage and current values are negative.

THERMAL DATA

$R_{th(j-case)}$	Thermal Resistance Junction-case	Max	1.67	°C/W
$R_{th(j-amb)}$	Thermal Resistance Junction-ambient	Max	70	°C/W

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector-cutoff Current ($I_B = 0$)	for 2N6486/89 $V_{CE} = 20V$ for 2N6487/90 $V_{CE} = 30V$ for 2N6488/91 $V_{CE} = 40V$			1 1 1	mA mA mA
I_{CEX}	Collector-cutoff Current ($V_{BE} = -1.5V$, $R_{BE} = 100\Omega$)	for 2N6486/89 $V_{CE} = 45V$ for 2N6487/90 $V_{CE} = 65V$ for 2N6488/91 $V_{CE} = 85V$ $T_{case} = 150^{\circ}C$ for 2N6486/89 $V_{CE} = 40V$ for 2N6487/90 $V_{CE} = 60V$ for 2N6488/91 $V_{CE} = 80V$			0.5 0.5 0.5 5 5 5	mA mA mA mA mA mA
I_{CER}	Collector-cutoff Current ($R_{BE} = 100\Omega$)	for 2N6486/89 $V_{CE} = 35V$ for 2N6487/90 $V_{CE} = 55V$ for 2N6488/91 $V_{CE} = 75V$			0.5 0.5 0.5	mA mA mA
I_{EBO}	Emitter-cutoff Current ($I_C = 0$)	$V_{EB} = 5V$			1	mA
$V_{CEO(sus)}^*$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 200mA$ for 2N6486/89 for 2N6487/90 for 2N6488/91	40 60 80			V V V
$V_{CER(sus)}^*$	Collector-emitter Sustaining Voltage ($R_{BE} = 100\Omega$)	$I_C = 200mA$ for 2N6486/89 for 2N6487/90 for 2N6488/91	45 65 85			V V V
$V_{CEX(sus)}^*$	Collector-emitter Sustaining Voltage ($V_{BE} = -1.5V$, $R_{BE} = 100\Omega$)	$I_C = 200mA$ for 2N6486/89 for 2N6487/90 for 2N6488/91	50 70 90			V V V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 5A$ $I_B = 0.5A$ $I_C = 15A$ $I_B = 5A$			1.3 3.5	V V
V_{BE}^*	Base-emitter Voltage	$I_C = 5A$ $V_{CE} = 4V$ $I_C = 15A$ $V_{CE} = 4V$			1.3 3.5	V V
h_{FE}^*	DC Current Gain	$I_C = 5A$ $V_{CE} = 4V$ $I_C = 15A$ $V_{CE} = 4V$	20 5		150	
h_{ie}	Small Signal Current Gain	$I_C = 1A$ $V_{CE} = 4V$ $f = 1MHz$ $I_C = 1A$ $V_{CE} = 4V$ $f = 1KHz$	5 25			

* Pulsed : pulse duration = 300us, duty cycle $\leq 2\%$.
For PNP types voltage and current values are negative.