

COMPLEMENTARY SILICON POWER TRANSISTORS

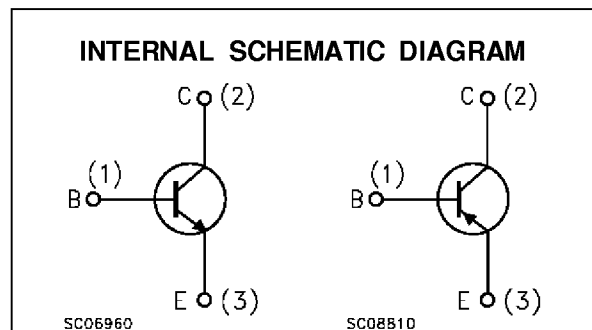
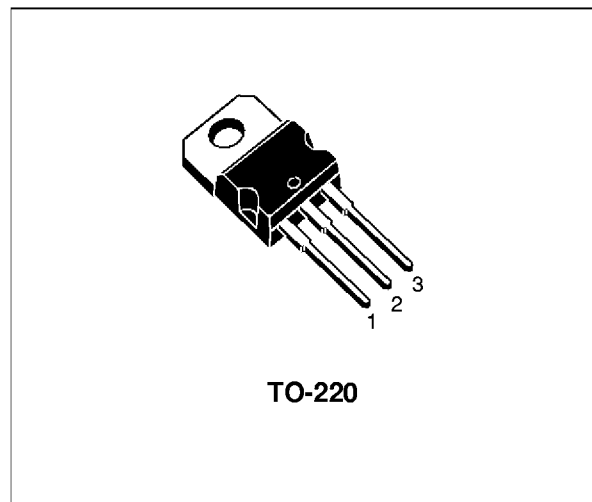
- 2N6487, 2N6488, 2N6489 AND 2N6490 ARE SGS-THOMSON PREFERRED SALESTYPES

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 low frequency switching applications.

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



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit	
		NPN	2N6486	2N6487		2N6488
		PNP	2N6489	2N6490		2N6491
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	50	70	90	V	
V_{CEX}	Collector-Emitter Voltage ($V_{BE} = -1.5V, R_{BE} = 100\Omega$)	50	70	90	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	15			A	
I_B	Base Current	5			A	
P_{tot}	Total Dissipation at $T_c \leq 25^\circ C$	75			W	
T_{stg}	Storage Temperature	-65 to 150			$^\circ C$	
T_j	Max. Operating Junction Temperature	150			$^\circ C$	

For PNP types voltage and current values are negative.

2N6486/2N6487/2N6488/2N6489/2N6490/2N6491

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	1.67	°C/W
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	70	°C/W

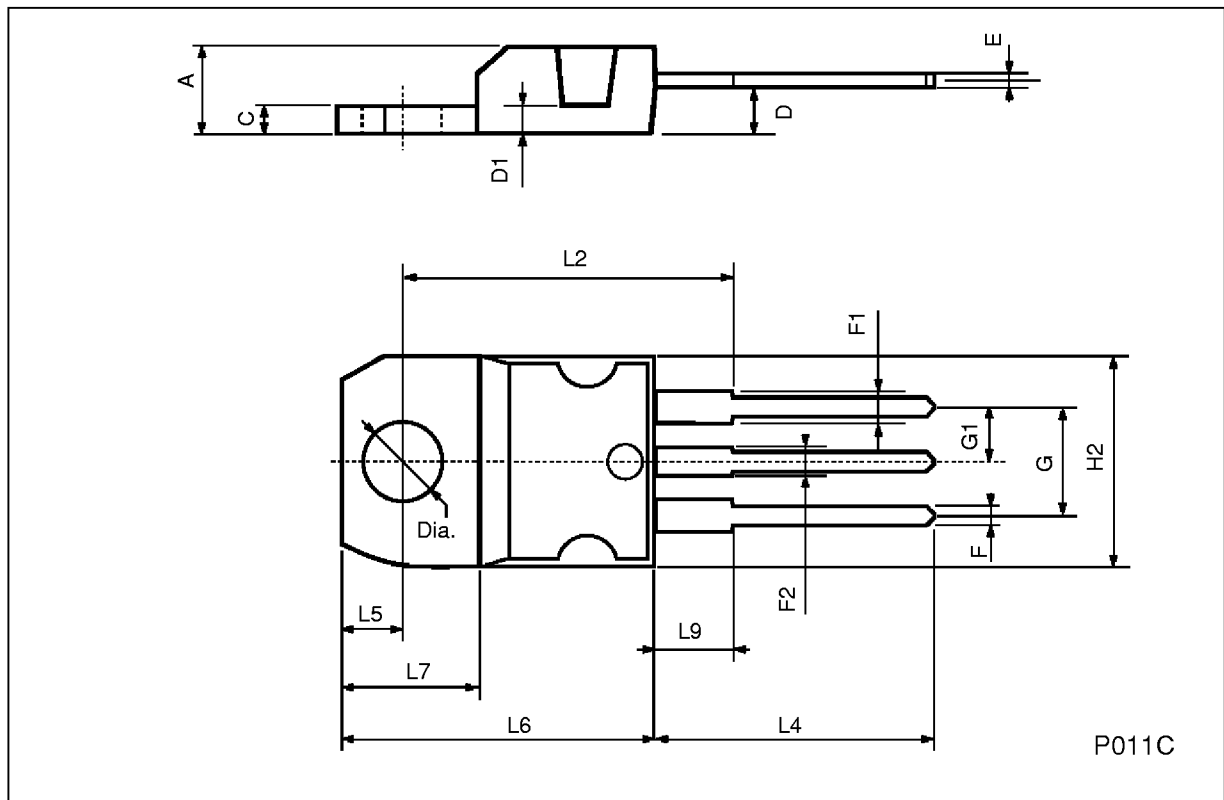
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
I _{CEX}	Collector Cut-off Current (V _{BE} = -1.5V)	for 2N6486/2N6489 V _{CE} = 45 V			0.5	mA	
		for 2N6487/2N6490 V _{CE} = 65 V			0.5	mA	
		for 2N6488/2N6491 V _{CE} = 85 V			0.5	mA	
		T _c = 150 °C					
		for 2N6486/2N6489 V _{CE} = 40 V			5	mA	
		for 2N6487/2N6490 V _{CE} = 60 V			5	mA	
for 2N6488/2N6491 V _{CE} = 80 V			5	mA			
I _{CER}	Collector Cut-off Current (R _{BE} = 100Ω)	for 2N6486/2N6489 V _{CE} = 35 V			0.5	mA	
		for 2N6487/2N6490 V _{CE} = 55 V			0.5	mA	
		for 2N6488/2N6491 V _{CE} = 75 V			0.5	mA	
I _{CEO}	Collector Cut-off Current (I _B = 0)	for 2N6486/2N6489 V _{CE} = 20 V			1	mA	
		for 2N6487/2N6490 V _{CE} = 30 V			1	mA	
		for 2N6488/2N6491 V _{CE} = 40 V			1	mA	
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			1	mA	
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage	I _C = 200 mA					
		for 2N6486/2N6489	40			V	
		for 2N6487/2N6490	60			V	
for 2N6488/2N6491	80			V			
V _{CER(sus)*}	Collector-Emitter Sustaining Voltage (R _{BE} = 100Ω)	I _C = 200 mA					
		for 2N6486/2N6489	45			V	
		for 2N6487/2N6490	65			V	
for 2N6488/2N6491	85			V			
V _{CEX(sus)*}	Collector-Emitter Sustaining Voltage (V _{BE} = -1.5V, R _{BE} = 100Ω)	I _C = 200 mA					
		for 2N6486/2N6489	50			V	
		for 2N6487/2N6490	70			V	
for 2N6488/2N6491	90			V			
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 5 A I _B = 0.5 A			1.3	V	
		I _C = 15 A I _B = 5 A			3.5	V	
V _{BE*}	Base-Emitter Voltage	I _C = 5 A V _{CE} = 4 V			1.3	V	
		I _C = 15 A V _{CE} = 4 V			3.5	V	
h _{FE*}	DC Current Gain	I _C = 5 A V _{CE} = 4 V	20		150		
		I _C = 15 A V _{CE} = 4 V	5				
h _{fe}	Small Signal Current Gain	I _C = 1 A V _{CE} = 4 V f = 1 MHz	5				
		I _C = 1 A V _{CE} = 4 V f = 1 KHz	25				

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5%
For PNP types voltage and current values are negative.

TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151



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