2N6487
2N6488/2N6490

COMPLEMENTARY SILICON POWER TRANSISTORS

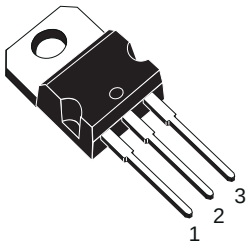
- STMicroelectronics PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES

DESCRIPTION

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

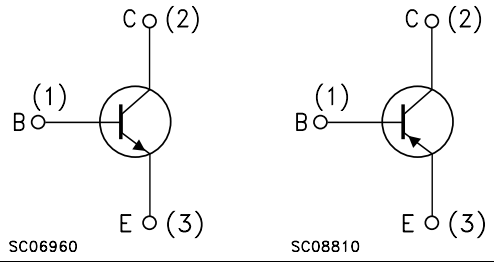
They are inteded for use in power linear and low frequency switching applications.

The 2N6487 complementary type is 2N6490.



TO-220

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value		Unit
		NPN	2N6487	2N6488	
		PNP	2N6490		
V_{CBO}	Collector-Base Voltage (I_E = 0)		70	90	V
V_{CEX}	Collector-Emitter Voltage (V_{BE}=-1.5V,R_{BE}=100Ω)		70	90	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)		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 $T_c \leq 25\ ^oC$		75		W
T_{stg}	Storage Temperature		-65 to 150		^oC
T_j	Max. Operating Junction Temperature		150		^oC

For PNP types voltage and current values are negative.

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	1.67	$^oC/W$
$R_{thj\text{-}amb}$	Thermal Resistance Junction-ambient	Max	70	$^oC/W$

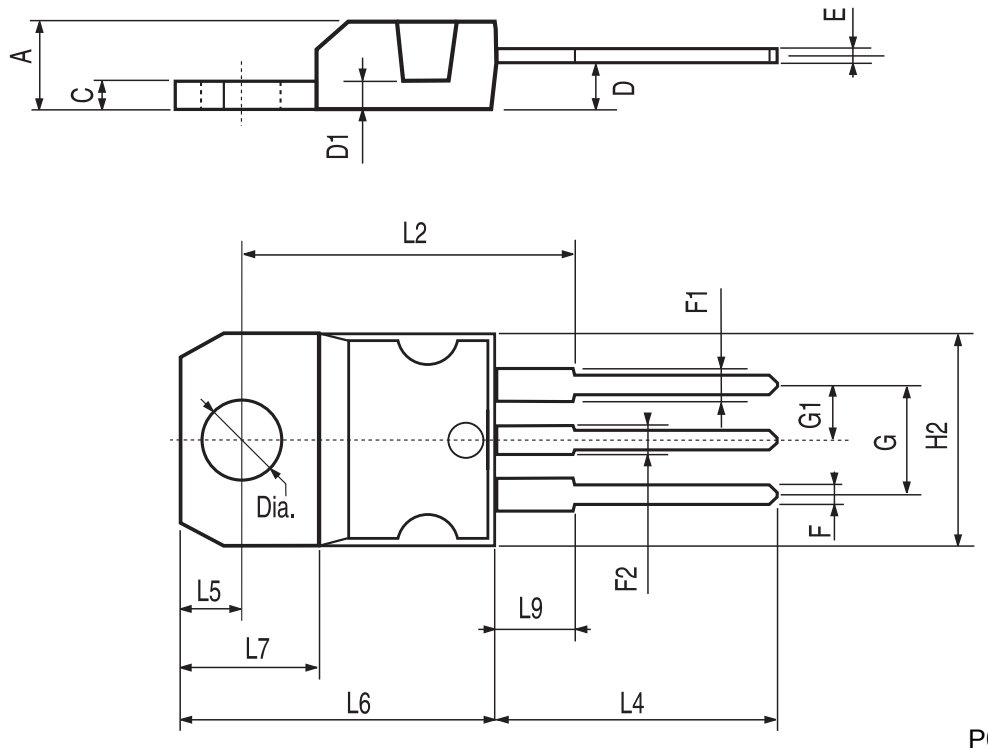
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEX}	Collector Cut-off Current (V_{BE} = -1.5V)	for **2N6487/2N6490** V_{CE} = 65 V for **2N6488** V_{CE} = 85 V T_c = 150 ^oC for **2N6487/2N6490** V_{CE} = 60 V for **2N6488** V_{CE} = 80 V			0.5 0.5 5 5	mA mA mA mA
I_{CER}	Collector Cut-off Current (R_{BE} = 100Ω)	for **2N6487/2N6490** V_{CE} = 55 V for **2N6488** V_{CE} = 75 V			0.5 0.5	mA mA
I_{CEO}	Collector Cut-off Current (I_B = 0)	for **2N6487/2N6490** V_{CE} = 30 V for **2N6488** V_{CE} = 40 V			1 1	mA 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 **2N6487/2N6490** for **2N6488**	 60 80			 V V
$V_{CER(sus)}$*	Collector-Emitter Sustaining Voltage (R_{BE} = 100Ω)	I_C = 200 mA for **2N6487/2N6490** for **2N6488**	 65 85			 V V
$V_{CEX(sus)}$*	Collector-Emitter Sustaining Voltage (V_{BE}=-1.5V, R_{BE}=100Ω)	I_C = 200 mA for **2N6487/2N6490** for **2N6488**	 70 90			 V V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 5 A I_B = 0.5 A I_C = 15 A I_B = 5 A			1.3 3.5	V V
V_{BE}*	Base-Emitter Voltage	I_C = 5 A V_{CE} = 4 V I_C = 15 A V_{CE} = 4 V			1.3 3.5	V V
h_{FE}*	DC Current Gain	I_C = 5 A V_{CE} = 4 V I_C = 15 A V_{CE} = 4 V	20 5		150	
h_{fe}	Small Signal Current Gain	I_C = 1 A V_{CE} = 4 V f = 1MHz I_C = 1 A V_{CE} = 4 V f = 1KHz	5 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



P011C