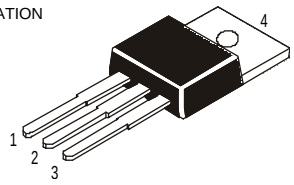
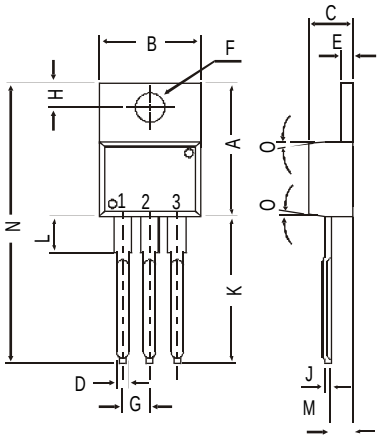
TO-220 Plastic Package

2N6486, 2N6487, 2N6488
2N6489, 2N6490, 2N6491

2N6486, 6487, 6488 NPN PLASTIC POWER TRANSISTORS
2N6489, 6490, 6491 PNP PLASTIC POWER TRANSISTORS
General Purpose Amplifier and Switching Applications

PIN CONFIGURATION
1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR





All diminsions in mm.

DIM	MIN.	MAX.
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D		0.90
E	1.15	1.40
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J		0.56
K	12.70	14.73
L	2.80	4.07
M	2.03	2.92
N		31.24
O	DEG 7	

ABSOLUTE MAXIMUM RATINGS

			6486 6487 6488			
			6489 6490 6491			
Collector-base voltage (open emitter)	V_{CBO}	*max.*	*50*	*70*	*90*	*V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*40*	*60*	*80*	*V*
Collector current	I_C	*max.*		*15*		*A*
Total power dissipation up to T_C = 25°C	P_{tot}	*max.*		*75*		*W*
Junction temperature	T_j	*max.*		*150*		*°C*
Collector-emitter saturation voltage						
I_C = 5 A; I_B = 0.5 A	V_{CEsat}	*max.*		*1.3*		*V*
D.C. current gain						
I_C = 5 A; V_{CE} = 4 V	h_{FE}	*min.*		*20*		
		max.		*150*		

RATINGS *(at T_A=25°C unless otherwise specified)*

Limiting values			***6486 6487 6488***			
			6489 6490 6491			
Collector-base voltage (open emitter)	V_{CBO}	*max.*	*50*	*70*	*90*	*V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*40*	*60*	*80*	*V*
Emitter-base voltage (open collector)	V_{EBO}	*max.*		*5.0*		*V*

Collector current	I_C	*max.*	*15*	*A*
Base current	I_B	*max.*	*5.0*	*A*
Total power dissipation up to T_C = 25°C	P_{tot}	*max.*	*75*	*W*
Derate above 25°C		*max.*	*0.6*	*W/°C*
Total power dissipation up to T_A = 25°C	P_{tot}	*max.*	*1.8*	*W*
Derate above 25°C		*max.*	*0.014*	*W/°C*
Junction temperature	T_j	*max.*	*150*	*°C*
Storage temperature	T_{stg}		*–65 to +150*	*°C*

THERMAL RESISTANCE

From junction to ambient	$R_{th\ j-a}$	*70*	*°C/W*
From junction to case	$R_{th\ j-c}$	*1.67*	*°C/W*

CHARACTERISTICS

T_{amb} = 25°C unless otherwise specified

			6486	***6487***	***6488 6489 6490 6491***	
Collector cutoff current						
I_B = 0; V_{CE} = 20 V	I_{CEO}	*max.*	*1.0*	*–*	*–*	*mA*
I_B = 0; V_{CE} = 30 V	I_{CEO}	*max.*	*–*	*1.0*	*–*	*mA*
I_B = 0; V_{CE} = 40 V	I_{CEO}	*max.*	*–*	*–*	*1.0*	*mA*
$V_{EB(off)}$ = 1.5 V; V_{CE} = 45 V	I_{CEX}	*max.*	*500*	*–*	*–*	*µA*
$V_{EB(off)}$ = 1.5 V; V_{CE} = 65 V	I_{CEX}	*max.*	*–*	*500*	*–*	*µA*
$V_{EB(off)}$ = 1.5 V; V_{CE} = 85 V	I_{CEX}	*max.*	*–*	*–*	*500*	*µA*
$V_{EB(off)}$ = 1.5 V; V_{CE} = 40 V; T_C=150°C	I_{CEX}	*max.*	*5.0*	*–*	*–*	*mA*
$V_{EB(off)}$ = 1.5 V; V_{CE} = 60 V; T_C=150°C	I_{CEX}	*max.*	*–*	*5.0*	*–*	*mA*
$V_{EB(off)}$ = 1.5 V; V_{CE} = 80 V; T_C=150°C	I_{CEX}	*max.*	*–*	*–*	*5.0*	*mA*
Emitter cut-off current						
I_C = 0; V_{EB} = 5 V	I_{EBO}	*max.*		*1.0*		*mA*
Breakdown voltages						
I_C = 200 mA; I_B = 0	$V_{CEO(sus)}$*	*min.*	*40*	*60*	*80*	*V*
I_C = 1 mA; I_E = 0	V_{CBO}	*min.*	*50*	*70*	*90*	*V*
I_C = 200 mA; V_{BE} = 1.5 V	$V_{CEX(sus)}$*	*min.*	*50*	*70*	*90*	*V*
I_E = 1 mA; I_C = 0	V_{EBO}	*min.*		*5.0*		*V*
Saturation voltages						
I_C = 5 A; I_B = 0.5 A	V_{CEsat}*	*max.*		*1.3*		*V*
I_C = 15 A; I_B = 5 A	V_{CEsat}*	*max.*		*3.5*		*V*
Base-emitter on voltage						
I_C = 5 A; V_{CE} = 4 V	$V_{BE(on)}$*	*max.*		*1.3*		*V*
I_C = 15 A; V_{CE} = 4 V	$V_{BE(on)}$*	*max.*		*3.5*		*V*
D.C. current gain						
I_C = 5 A; V_{CE} = 4 V	h_{FE}*	*min.*		*20*		
		max.		*150*		
I_C = 15 A; V_{CE} = 4 V	h_{FE}*	*min.*		*5.0*		
Transition frequency						
I_C = 1 A; V_{CE} = 4 V; f = 1 MHz	$f_{T(1)}$	*min.*		*5.0*		*MHz*
Small signal current gain						
I_C = 1.0A; V_{CE} = 4V; f = 1.0 KHz	h_{fe}	*min.*		*25*		

** Pulse test: pulse width ≤ 300 µs; duty cycle ≤ 2%*

(1) $f_T = |h_{fe}| \cdot f_{test}$

Notes

Disclaimer

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