

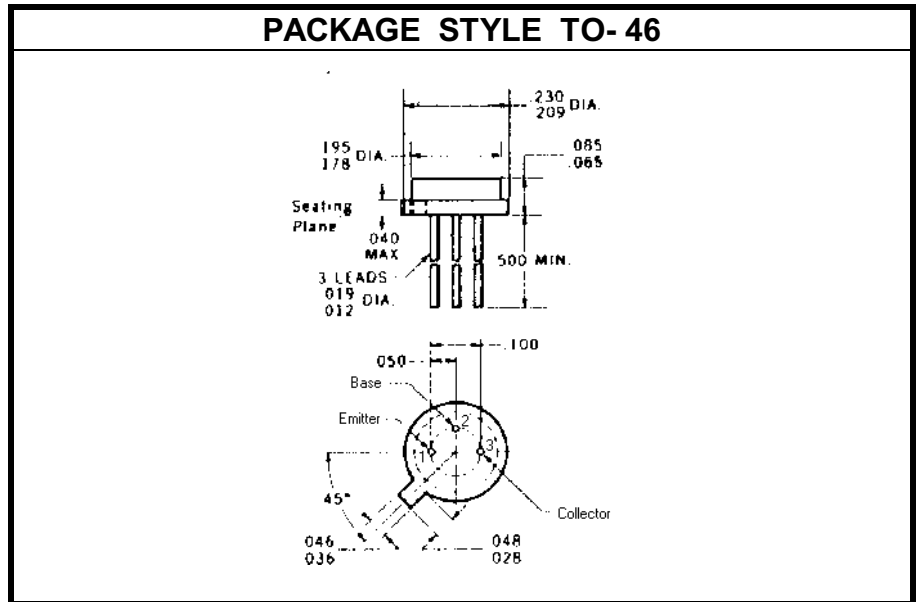
SILICON NPN TRANSISTOR

DESCRIPTION:

The **2N3508** is Designed for General Purpose Very Fast Switching Applications

MAXIMUM RATINGS

I_C	500 mA (PEAK)
V_{CE}	20 V
P_{DISS}	2.0 W @ $T_C = 25^\circ\text{C}$
T_J	-65°C to $+200^\circ\text{C}$
T_{STG}	-65°C to $+200^\circ\text{C}$
θ_{JC}	87.5 $^\circ\text{C/W}$


STATIC CHARACTERISTICS $T_C = 25^\circ\text{C}$

SYMBOL	TEST CONDITIONS		MINIMUM	TYPICAL	MAXIMUM	UNITS	
BV_{CEO}	$I_C = 10\text{ mA}$		20			V	
BV_{CES}	$I_C = 10\text{ }\mu\text{A}$		40			V	
I_{CBO}	$V_{CB} = 20\text{ V}$	$T_A = 25^\circ\text{C}$ $T_A = 150^\circ\text{C}$			0.2 30	μA	
I_{CEX}	$V_{CE} = 20\text{ V}$	$V_{EB} = -3.0\text{ V}$			200	nA	
I_{BL}	$V_{CE} = 20\text{ V}$	$V_{EB} = -3.0\text{ V}$			500	nA	
I_{EBO}	$V_{EB} = 6.0\text{ V}$				10	μA	
h_{FE}	$V_{CE} = 1.0\text{ V}$	$I_C = 10\text{ mA}$	$T_A = 25^\circ\text{C}$	40		120	---
		$I_C = 100\text{ mA}$	$T_A = -55^\circ\text{C}$	20			
		$I_C = 100\text{ mA}$		20			
$V_{CE(SAT)}$	$I_C = 10\text{ mA}$	$I_B = 1.0\text{ mA}$			0.25	V	
	$I_C = 100\text{ mA}$	$I_B = 10\text{ mA}$			0.45		
$V_{BE(SAT)}$	$I_C = 10\text{ mA}$	$I_B = 1.0\text{ mA}$	0.7		0.85	V	
	$I_C = 100\text{ mA}$	$I_B = 10\text{ mA}$	0.8		1.4		



DYNAMIC CHARACTERISTICS $T_c = 25^\circ\text{C}$

C_{ob}	$V_{CB} = 5.0\text{ V}$	$f = 140\text{ KHz}$			4.0	pF
C_{ib}	$V_{BE} = 1.0\text{ V}$	$f = 140\text{ KHz}$			4.0	pF
h_{fe}	$V_{CE} = 10\text{ V}$	$I_C = 10\text{ mA}$	$f = 100\text{ MHz}$	5.0		---
t_s	$I_C = I_{B1} = I_{B2} = 10\text{ mA}$				13	nS
t_{on}	$I_C = 10\text{ mA}$	$I_{B1} = 3.0\text{ mA}$			12	nS
t_{off}	$I_C = 10\text{ mA}$	$I_{B1} = 3.0\text{ mA}$	$I_{B2} = 1.5\text{ mA}$		18	nS
Q_T	$I_C = 10\text{ mA}$	$I_B = 1.0\text{ mA}$			30	pC
t_d	$I_C = 100\text{ mA}$	$I_B = 10\text{ mA}$	$V_{EB} = 2.0\text{ V}$		5.0	nS
t_r	$I_C = 100\text{ mA}$	$I_B = 10\text{ mA}$	$V_{EB} = 2.0\text{ V}$		18	nS
t_s	$I_C = 100\text{ mA}$	$I_{B1} = I_{B2} = 10\text{ mA}$			13	nS
t_f	$I_C = 100\text{ mA}$	$I_{B1} = I_{B2} = 10\text{ mA}$			15	nS