

Silicon NPN Power Transistor

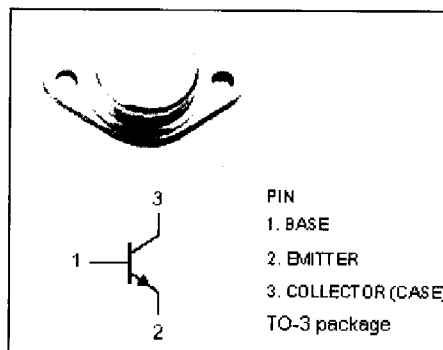
2N5805

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 300V(\text{Min})$
- DC Current Gain-
: $h_{FE} = 10-100 @ I_C = 5A$

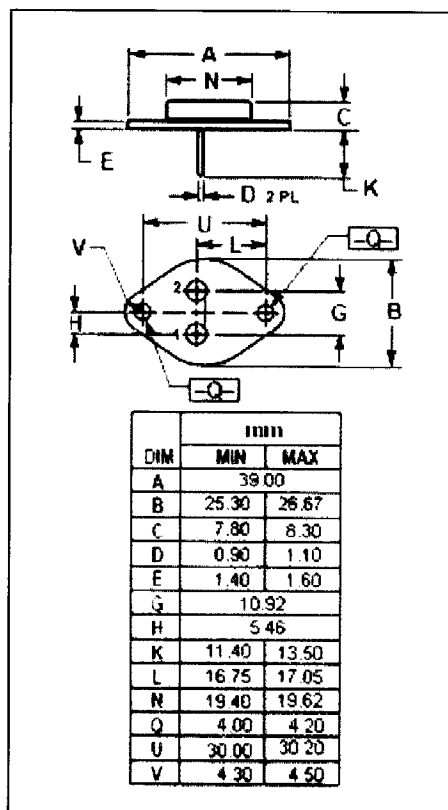
APPLICATIONS

- Switching regulator
- Inverters
- Solenoid and relay drivers
- Motor controls



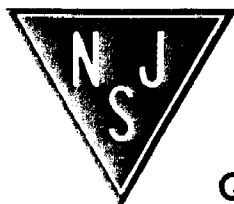
ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	375	V
V_{CEO}	Collector-Emitter Voltage	300	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	10	A
P_C	Collector Power Dissipation@ $T_c=25^\circ\text{C}$	110	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~200	$^\circ\text{C}$



THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.6	$^\circ\text{C/W}$



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Silicon NPN Power Transistor**2N5805****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=100\text{mA}; I_B=0$	300		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$		2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$		2.0	V
I_{CEV}	Collector Cutoff Current	$V_{CE}=375\text{V}; V_{BE(off)}=-1.5\text{V}$		12	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=300\text{V}; I_B=0$		10	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$		1.0	mA
h_{FE}	DC Current Gain	$I_C=5\text{A}; V_{CE}=4\text{V}$	10	100	
f_r	Current Gain-Bandwidth Product	$I_C=1\text{A}; V_{CE}=10\text{V}$	15		MHz