

isc Silicon NPN Power Transistor

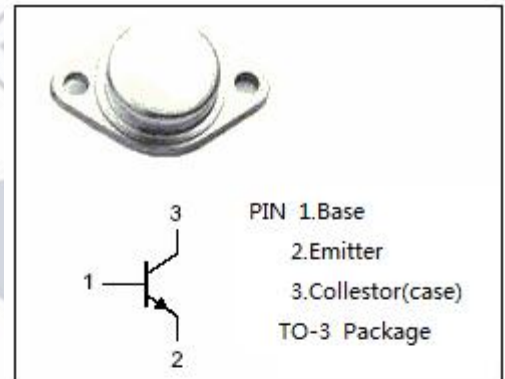
2N6581

DESCRIPTION

- Excellent Safe Operating Area
- High Voltage, High Speed
- Low Saturation Voltage
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 450V(\text{Min})$

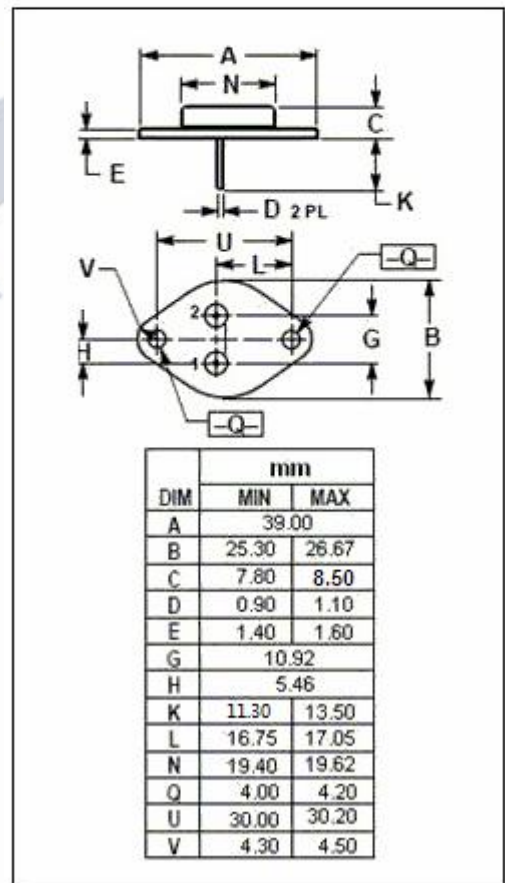
APPLICATIONS

- Off-line power supplies
- Switching amplifiers
- Inverters/Converters
- Motor speed control circuits
- Switching regulator
- Solenoid & relay drivers



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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	550	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	9.0	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	16	A
I_B	Base Current-Continuous	5	A
P_C	Collector Power Dissipation@ $T_c=25^\circ\text{C}$	125	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~150	$^\circ\text{C}$



THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.4	$^\circ\text{C/W}$

isc Silicon NPN Power Transistor**2N6581****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CE0(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 50\text{mA}; I_B = 0$	450		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = 5\text{A}; I_B = 1\text{A}$		1.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{A}; I_B = 5\text{A}$		3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 5\text{A}; I_B = 1\text{A}$		1.5	V
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 9.0\text{V}; I_C = 0$		0.1	mA
h_{FE}	DC Current Gain	$I_C = 5\text{A}; V_{CE} = 3\text{V}$	7	35	
f_T	Current Gain-Bandwidth Product	$I_C = 1\text{A}; V_{CE} = 10\text{V}; f_{test} = 10\text{MHz}$	12.5	50	MHz
C_{OB}	Output Capacitance	$I_E = 0; V_{CB} = 10\text{V}; f_{test} = 1.0\text{MHz}$	75	250	pF

Switching times-Resistive Load

t_d	Delay Time	$I_C = 5\text{A}, I_{B1} = -I_{B2} = 1\text{A}, V_{CC} = 150\text{V}; R = 30\ \Omega$ $t_p = 100\ \mu\text{s}; \text{Duty Cycle} \leq 2.0\%$		0.05	μs
t_r	Rise Time			0.5	μs
t_s	Storage Time			2.0	μs
t_f	Fall Time			0.5	μs