

isc Silicon NPN Power Transistor

2SC2078

DESCRIPTION

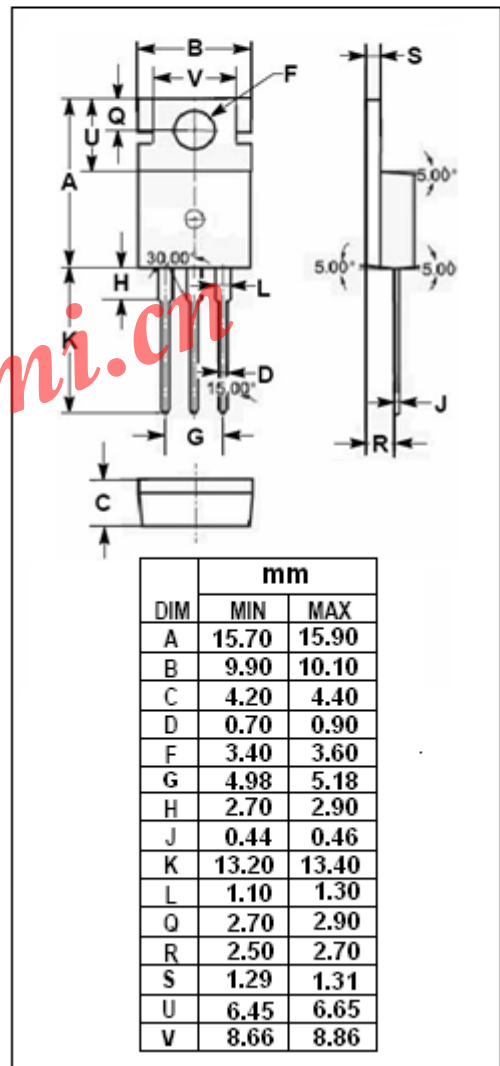
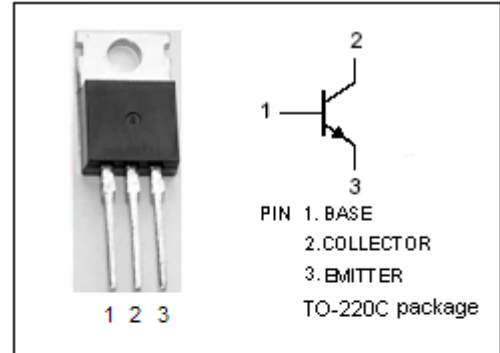
- Collector-Emitter Voltage-
: $V_{CER} = 75V(\text{Min}) ; R_{BE} = 150 \Omega$
- Collector Current-
: $I_C = 3A$

APPLICATIONS

- 27MHz RF Power Amplifier Applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	80	V
V_{CER}	Collector-Emitter Voltage $R_{BE} = 150 \Omega$	75	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	3	A
I_{CM}	Collector Current-Peak	5	A
P_C	Collector Power Dissipation @ $T_a = 25^\circ C$	1.2	W
	Collector Power Dissipation @ $T_c = 50^\circ C$	10	
T_J	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature Range	-55~150	$^\circ C$



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=0.1\text{mA}; I_B=0$	80			V
$V_{(BR)CER}$	Collector-Emitter Breakdown Voltage	$I_C=0.1\text{mA}; R_{BE}=150\Omega$	75			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=0.1\text{mA}; I_C=0$	5			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=1\text{A}; I_B=0.1\text{A}$			0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=1\text{A}; I_B=0.1\text{A}$			1.2	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=40\text{V}; I_E=0$			10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=4\text{V}; I_C=0$			10	μA
h_{FE}	DC Current Gain	$I_C=500\text{mA}; V_{CE}=5\text{V}$	25		200	
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1\text{MHz}$		45	60	pF
f_T	Current-Gain—Bandwidth Product	$I_C=500\text{mA}; V_{CE}=10\text{V}$	100			MHz
P_O	Output Power	$V_{CC}=12\text{V}; P_{in}=0.2\text{W}; f=27\text{MHz}$	4.0			W
η	Power Efficiency		60			%

◆ h_{FE} Classifications

B	C	D	E
25-50	40-80	60-120	100-200