

UTC2SD1664 NPN EPITAXIAL SILICON TRANSISTOR

MEDIUM POWER NPN TRANSISTOR

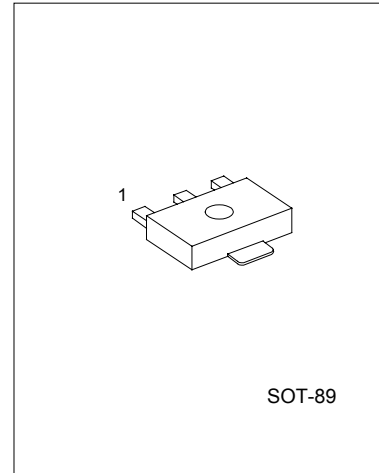
DESCRIPTION

The UTC 2SD1664 is an epitaxial planar type NPN silicon transistor.

FEATURES

*Low $V_{CE(sat)}$: $V_{CE(sat)} = 0.15V$ (Typ)
($I_C/I_B = 500mA/50mA$)

*Complement the 2SB1132.



1:EMITTER 2:COLLECTOR 3:BASE

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

PARAMETER	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	40	V
Collector-Emitter Voltage	V_{CEO}	32	V
Emitter-Base Voltage	V_{EB0}	5	V
Collector Current DC PULSE (Note1)	I_C	1	A
		2	A
Collector Power Dissipation	P_C	0.5	W
		2 (Note2)	W
Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}C$

Note1: Duty=1/2, $P_w=20ms$

Note2: When mounted on a 40*40*0.7 mm ceramic board.

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}C$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Base Breakdown Voltage	BV_{CB0}	$I_C = 50 \mu A$	40			V
Collector Emitter Breakdown Voltage	BV_{CEO}	$I_C = 1mA$	32			V
Emitter Base Breakdown Voltage	BV_{EB0}	$I_E = 50 \mu A$	5			V
Collector Cut-Off Current	I_{CBO}	$V_{CB} = 20V$			0.5	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = 4V$			0.5	μA
DC Current Transfer Ratio	h_{FE}	$V_{CE} = 3V, I_C = 100mA$	82		390	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C/I_B = 500mA/50mA$		0.15	0.4	V
Transition Frequency	f_T	$V_{CE} = 5V, I_E = -50mA, f = 100MHz$		150		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0A, f = 1MHz$		15		pF

CLASSIFICATION OF h_{FE}

RANK	P	Q	R
RANGE	82-180	120-270	180-390

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QW-R208-025,A

ELECTRICAL CHARACTERISTICS CURVES

Figure 1. Grounded Emitter Propagation Characteristics

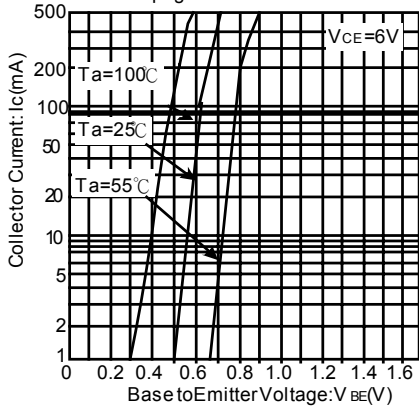


Figure 2. Grounded Emitter Output Characteristics

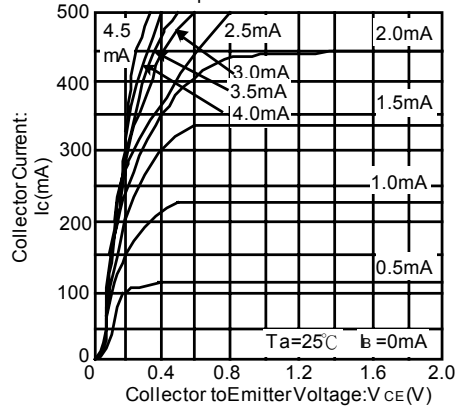


Figure 3. DC Current Gain vs. Collector Current (I)

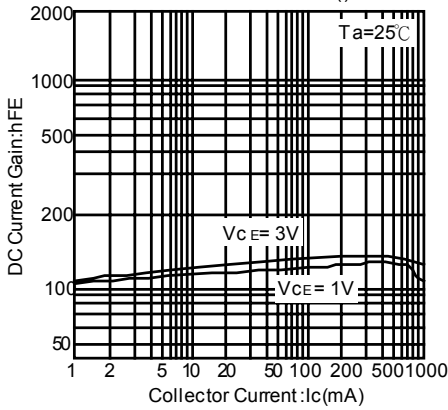


Figure 4. DC Current Gain vs. Collector Current (II)

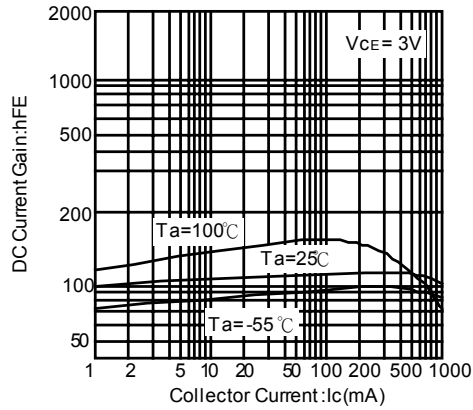


Figure 5. Collector-emitter Saturation Voltage vs. Collector Current (I)

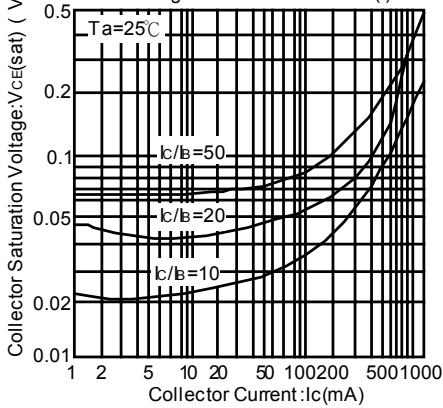


Figure 6. Collector-emitter Saturation Voltage vs. Collector Current (II)

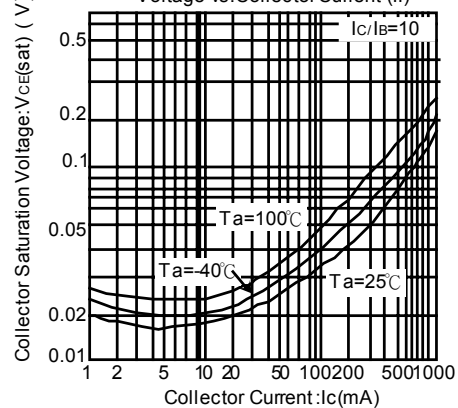


Figure 7. Gain Bandwidth Product vs. Emitter Current

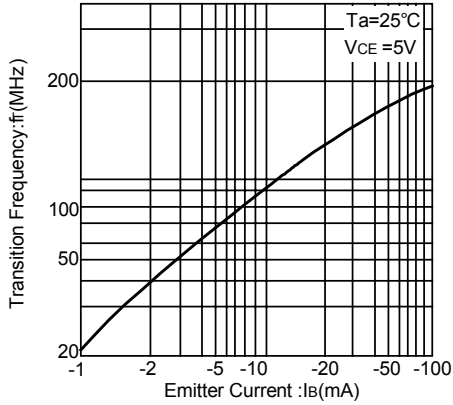


Figure 8. Collector Output Capacitance vs. Collector-base Voltage

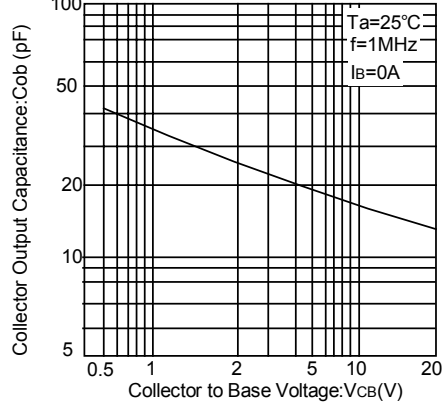


Figure 9. Safe Operation Area

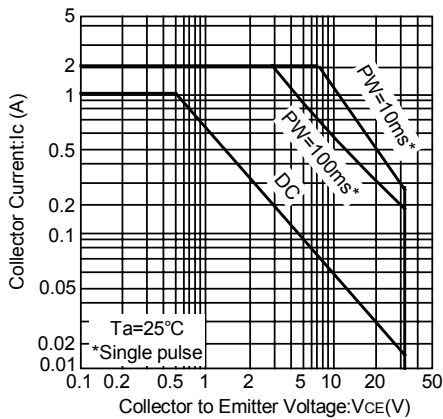
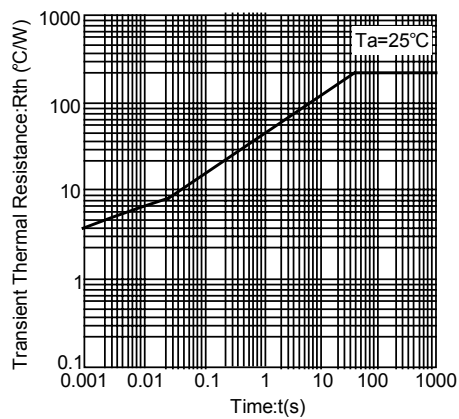


Figure 10. Transient Thermal Resistance



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