

UTC2SD1803 NPN EPITAXIAL PLANAR SILICON TRANSISTOR

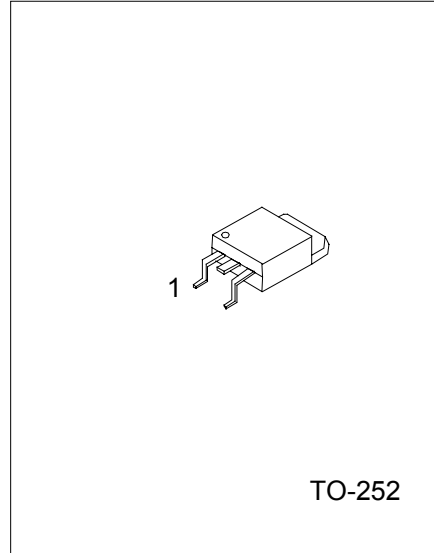
HIGH CURRENT SWITCHING APPLICATION

APPLICATIONS

The UTC 2SD1803 applies to relay drivers, high-speed inverters, converters, and other general high-current switching applications.

FEATURES

- *Low collector-to-emitter saturation voltage.
- *High current and high f_T .
- *Excellent linearity of h_{FE} .
- *Fast switching time.



TO-252

1: BASE 2: COLLECTOR 3: EMITTER

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

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CB0}	60	V
Collector-Emitter Voltage	V_{CE0}	50	V
Emitter-Base Voltage	V_{EB0}	6	V
Collector Current	I_c	5	A
Collector Current(PULSE)	I_{cp}	8	A
Collector Dissipation	P_c	1	W
Collector Dissipation($T_c=25^\circ\text{C}$)	P_c	20	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	60			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	50			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector Cutoff Current	I_{CBO}	$V_{CB}=40\text{V}, I_E=0$			1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			1	μA
DC Current Gain	h_{FE1}	$V_{CE}=2\text{V}, I_c=0.5\text{A}$	70*		400*	
	h_{FE2}	$V_{CE}=2\text{V}, I_c=4\text{A}$	35			
Gain-Bandwidth Product	f_T	$V_{CE}=5\text{V}, I_c=1\text{A}$		180		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		40		pF

UTC UNISONIC TECHNOLOGIES CO. LTD

1

QW-R209-014,A

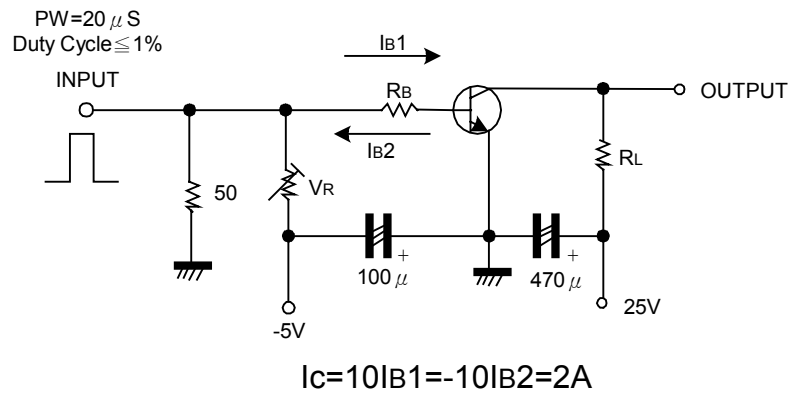
UTC2SD1803 NPN EPITAXIAL PLANAR SILICON TRANSISTOR

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=3A, I_B=0.15A$		220	400	mV
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=3A, I_B=0.15A$		0.95	1.3	V
Turn-on Time	t_{on}	See test circuit		50		ns
Storage Time	t_{stg}	See test circuit		500		ns
Fall Time	t_f	See test circuit		20		ns

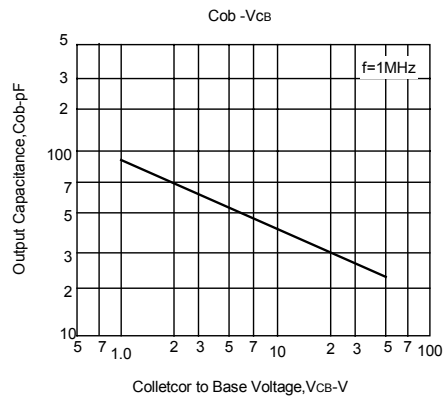
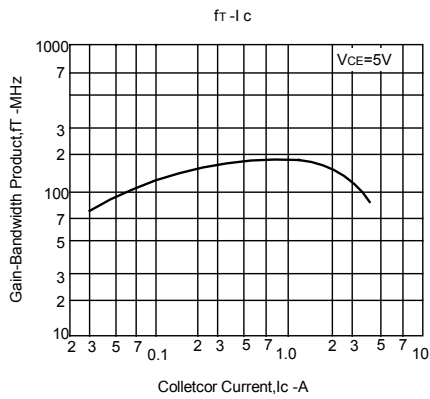
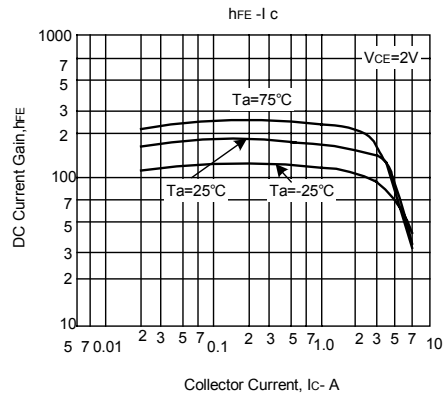
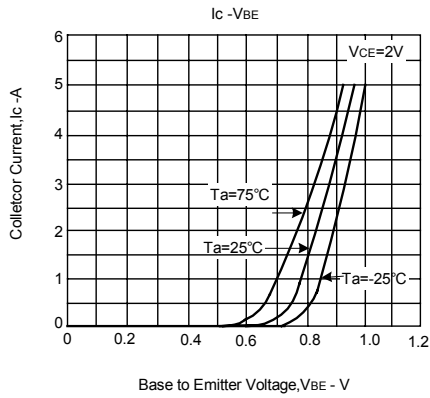
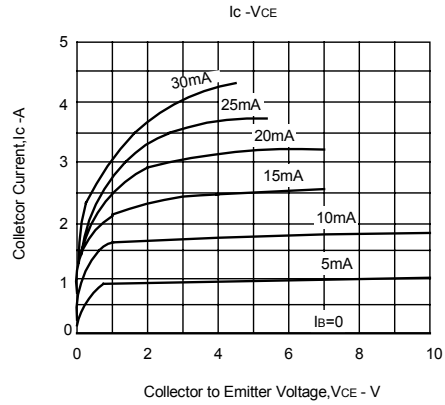
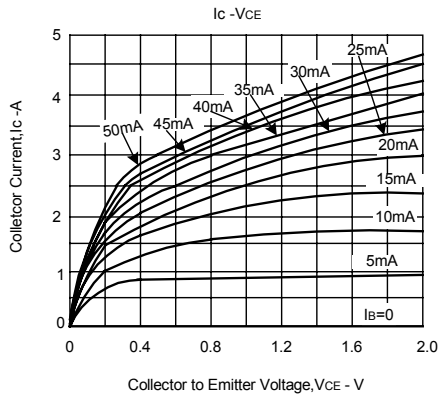
CLASSIFICATION OF h_{FE1}

RANK	Q	R	S	T
RANGE	70-140	100-200	140-280	200-400

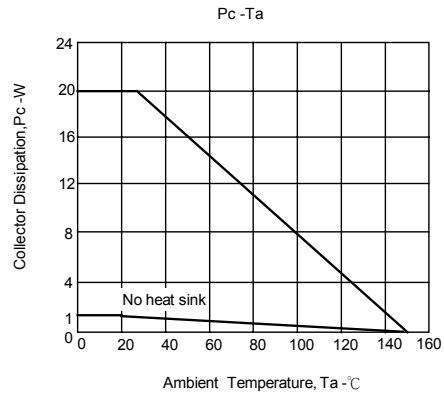
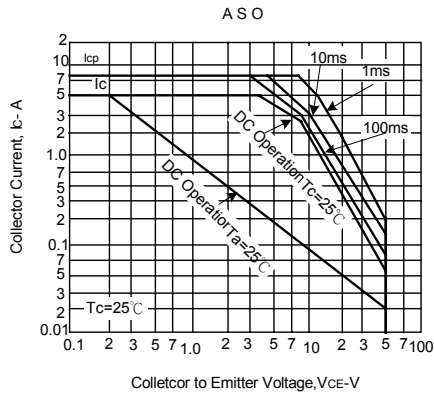
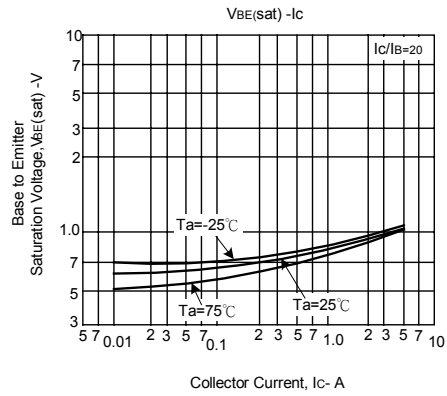
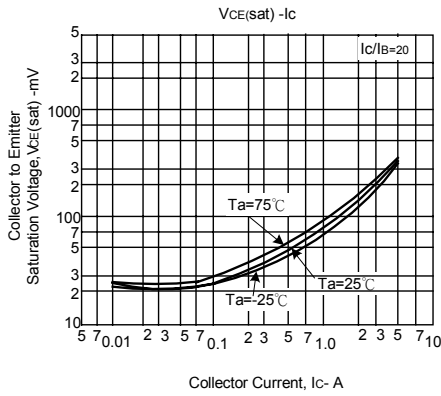
SWITCHING TIME TEST CIRCUIT (Unit : (resistance : Ω , capacitance : F))



UTC2SD1803 NPN EPITAXIAL PLANAR SILICON TRANSISTOR



UTC2SD1803 NPN EPITAXIAL PLANAR SILICON TRANSISTOR



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.