

UTC2SD1804 NPN EPITAXIAL PLANAR SILICON TRANSISTOR

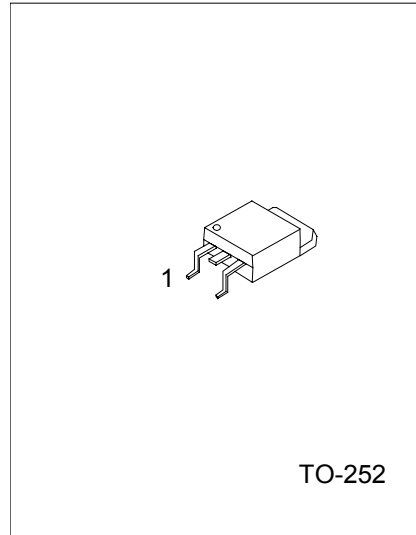
HIGH CURRENT SWITCHING
APPLICATIONS

APPLICATIONS

The UTC 2SD1804 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
- *Small and slim package making it easy to make 2SD1804 applied sets smaller.



1: BASE 2: COLLECTOR 3: EMITTER

ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V _{CB0}	60	V
Collector-Emitter Voltage	V _{CEO}	50	V
Emitter-Base Voltage	V _{EB0}	6	V
Collector Dissipation	P _c	1	W
	T _c =25°C	20	W
Collector Current	I _c	8	A
Collector Current(PULSE)	I _{cp}	12	A
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cutoff Current	I _{CB0}	V _{CB} =40V, I _E =0			1	μA
Emitter Cutoff Current	I _{EB0}	V _{EB} =4V, I _C =0			1	μA
DC Current Gain	h _{FE1}	V _{CE} =2V, I _c =0.5A	70		400	
	h _{FE2}	V _{CE} =2V, I _c =6A	35			
Gain-Bandwidth Product	f _T	V _{CE} =5V, I _c =1A		180		MHz
Output Capacitance	C _{ob}	V _{CE} =10V, f=1MHz		65		pF
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =4A, I _B =0.2A		200	400	mV
Base-Emitter Saturation Voltage	V _{BE(sat)}	I _C =4A, I _B =0.2A		0.95	1.3	V

UTC UNISONIC TECHNOLOGIES CO. LTD

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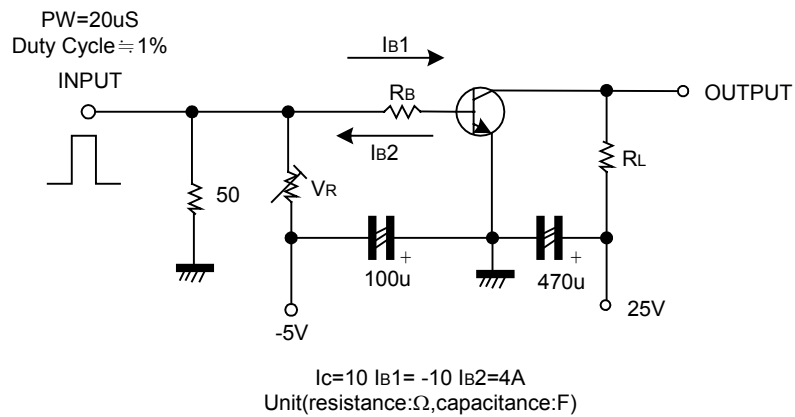
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PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6			V
Storage Time	tstg	See test circuit		500		ns
Fall Time	tf	See test circuit		20		ns

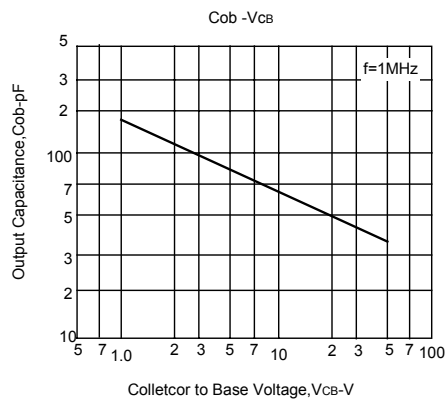
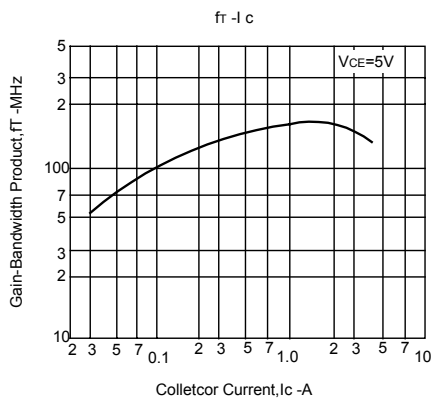
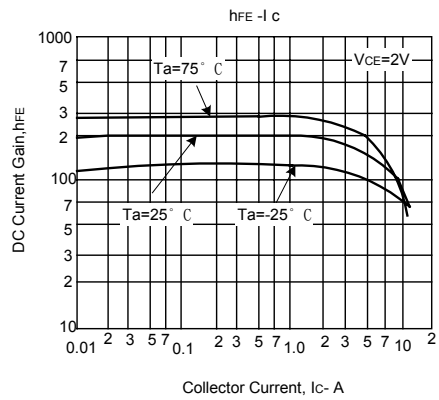
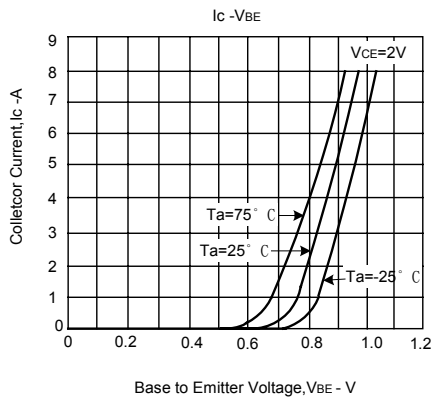
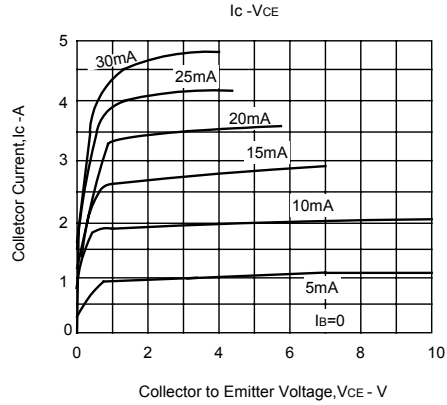
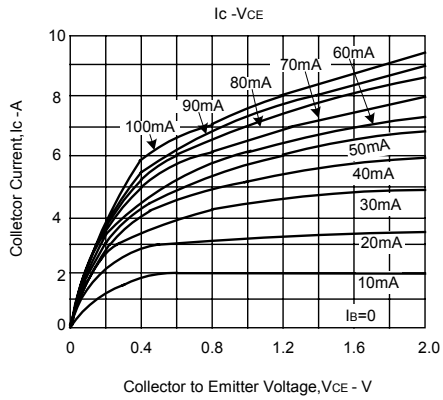
CLASSIFICATION OF h_{FE1}

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

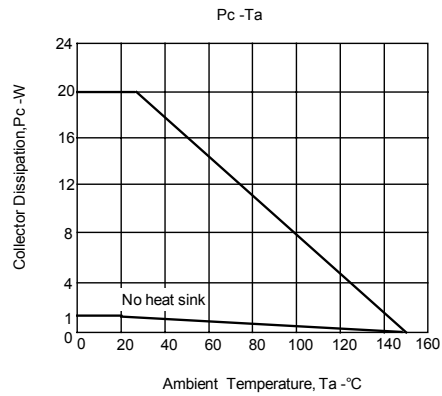
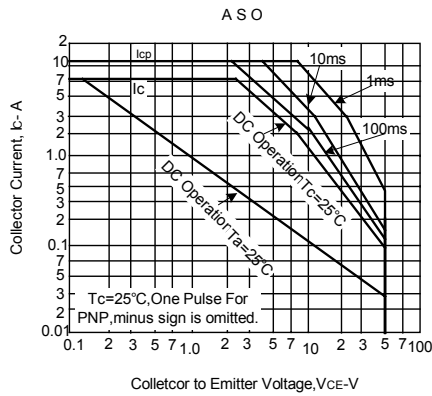
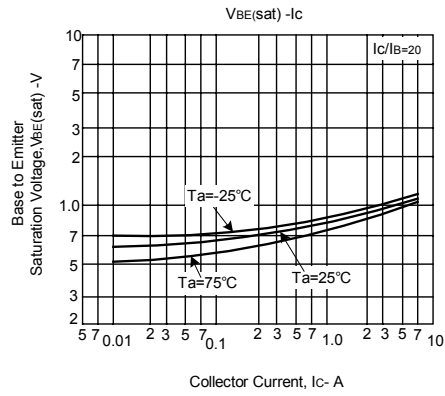
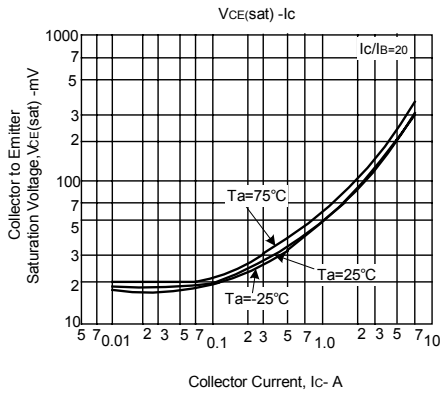
SWITCHING TIME TEST CIRCUIT



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