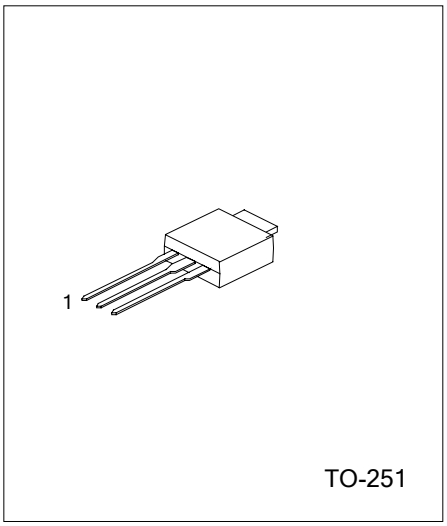
2SD1803

NPN EPITAXIAL SILICON TRANSISTOR

HIGH CURRENT SWITCHING APPLICATION



*Pb-free plating product number:2SD1803L

■ DESCRIPTION

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.

■ PIN CONFIGURATION

PIN NO.	PIN NAME
1	BASE
2	COLLECTOR
3	EMITTER

■ ORDERING INFORMATION

Order Number		Package	Packing
Normal	Lead free		
2SD1803-TM3-T	2SD1803L-TM3-T	TO-251	Tube

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■ ABSOLUATE MAXIUM RATINGS (Ta = 25℃)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	60	V
Collector-Emitter Voltage		V_{CEO}	50	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	5	A
	PULSE	I_{CM}	8	A
Power Dissipation	Tc=25℃	P_D	20	W
	Ta=25℃		1	W
Junction Temperature		T_J	+150	℃
Storage Temperature		T_{STG}	-40 ~ +150	℃

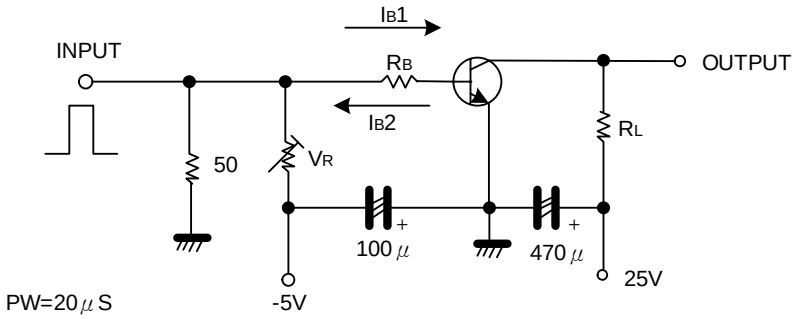
■ ELECTRICAL CHARACTERISTICS (Ta= 25℃, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=10μA, I_E=0	60			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA, R_{BE}=∞	50			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=10μA, I_C=0	6			V
Collector Cutoff Current	I_{CBO}	V_{CB}=40V, I_E=0			1	μA
Emitter Cutoff Current	I_{EBO}	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=4A	35			
Gain-Bandwidth Product	f_T	V_{CE}=5V, Ic=1A		180		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		40		pF
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_S	See Test Circuit		500		ns
Fall Time	t_F	See Test Circuit		20		ns

■ CLASSIFICATION OF hFE 1

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

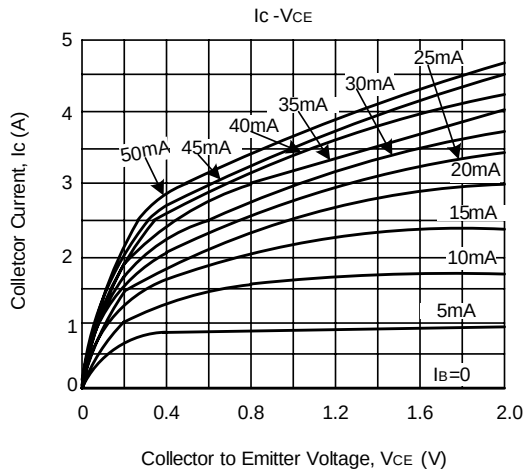
■ TEST CIRCUIT

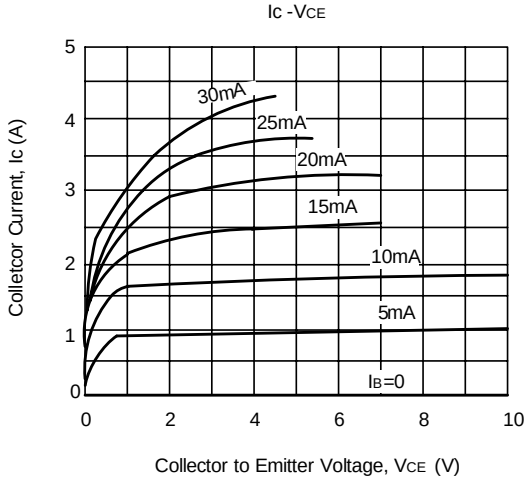


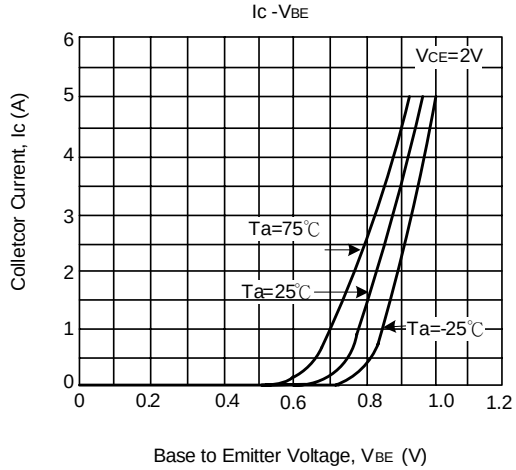
PW=20 μ S
Duty Cycle ≦1%
$I_C=10I_{B1}=-10I_{B2}=2A$

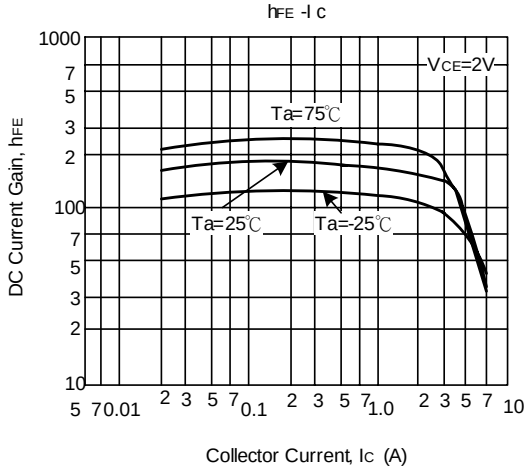
(Unit : (resistance : Ω, capacitance : F))

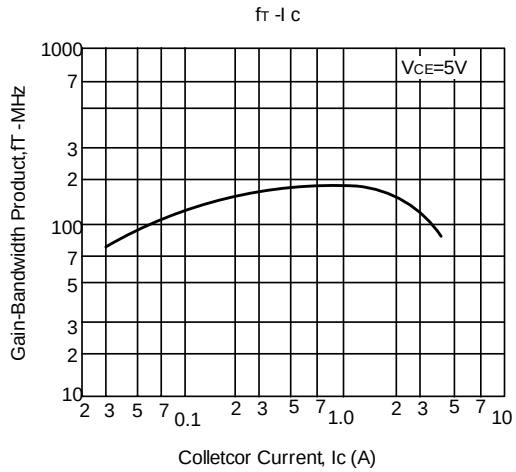
■ TYPICAL CHARACTERICS

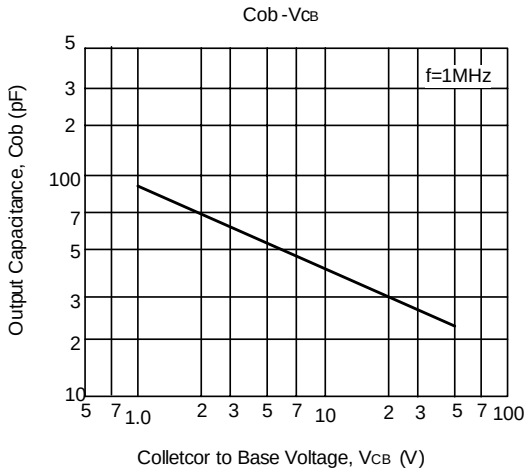




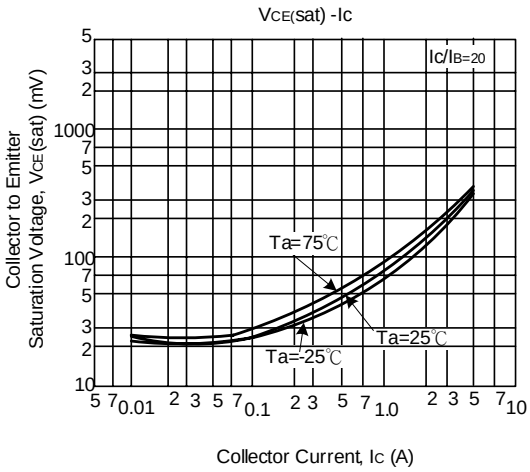


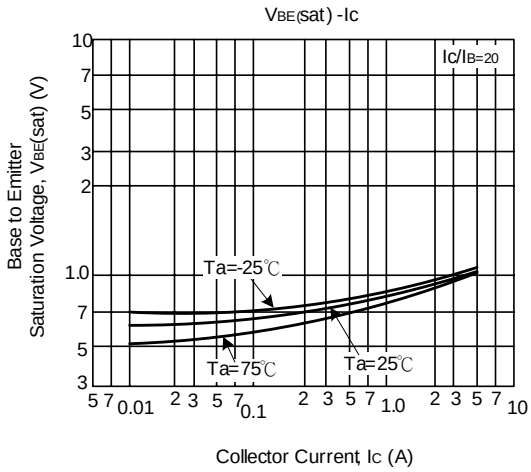


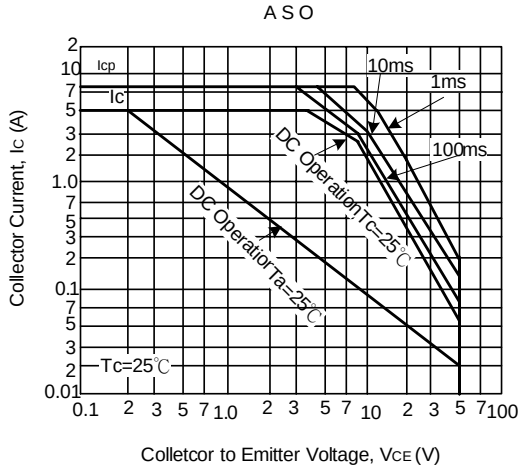


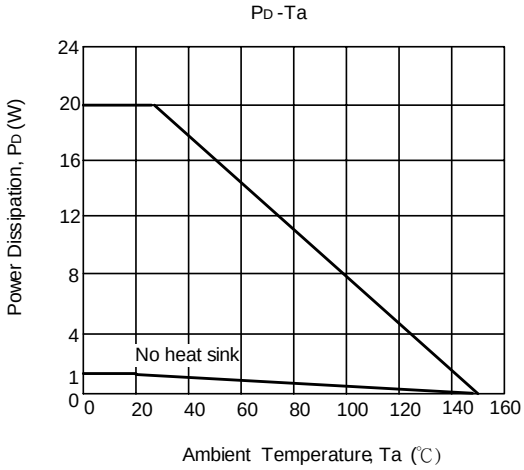


■ TYPICAL CHARACTERICS(cont.)









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