



2SD1803

NPN SILICON TRANSISTOR

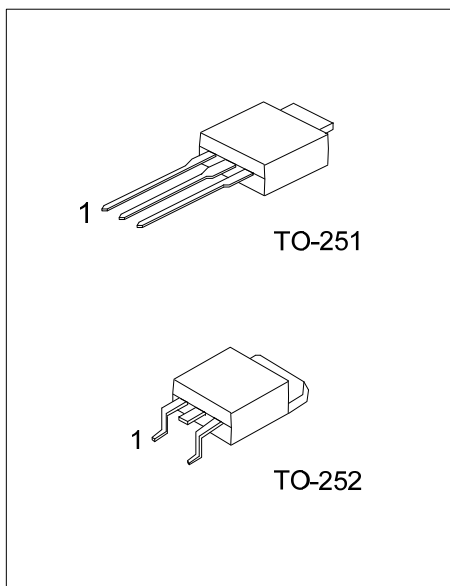
HIGH CURRENT SWITCHING APPLICATION

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.



ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free Plating	Halogen Free		1	2	3	
2SD1803-x-TM3-T	2SD1803L-x-TM3-T	2SD1803G-x-TM3-T	TO-251	B	C	E	Tube
2SD1803-x-TN3-R	2SD1803L-x-TN3-R	2SD1803G-x-TN3-R	TO-252	B	C	E	Tape Reel
2SD1803-x-TN3-T	2SD1803L-x-TN3-T	2SD1803G-x-TN3-T	TO-252	B	C	E	Tube

<p>2SD1803L-x-TM3-T</p>	<p>(1) Packing Type (2) Package Type (3) Rank (4) Lead Plating</p>	<p>(1) R: Tape Reel, T: Tube (2) TM3: TO-251, TN3: TO-252 (3) x: refer to Classification of h_{FE1} (4) L: Lead Free Plating, G: Halogen Free Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CB0}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	DC	I_C	5
	PULSE	I_{CM}	8
Power Dissipation	$T_A=25^\circ\text{C}$	P_D	1
	$T_C=25^\circ\text{C}$		20
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

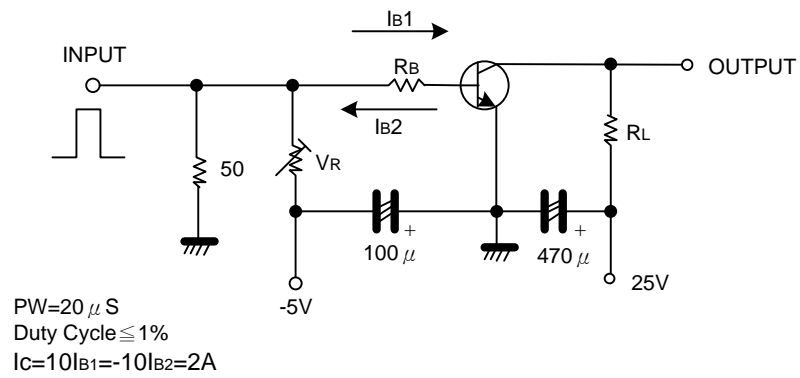
■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CB0}	$I_C=10\mu\text{A}, I_E=0$	60			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=1\text{mA}, R_{BE}=\infty$	50			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector Cutoff Current	I_{CB0}	$V_{CB}=40\text{V}, I_E=0$			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			
C-E Saturation Voltage	$V_{CE(SAT)}$	$I_C=3\text{A}, I_B=0.15\text{A}$		220	400	mV
B-E Saturation Voltage	$V_{BE(SAT)}$	$I_C=3\text{A}, I_B=0.15\text{A}$		0.95	1.3	V
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
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 h_{FE1}

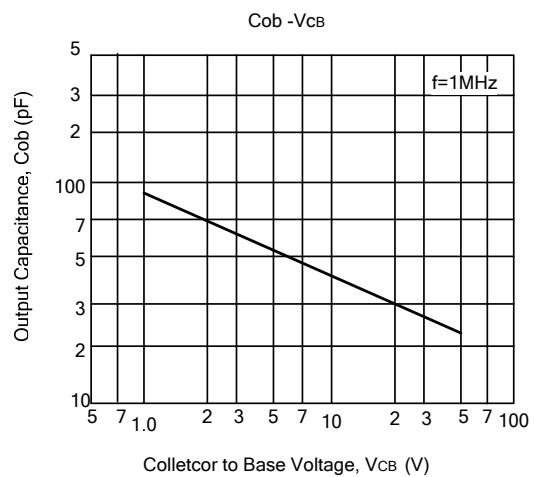
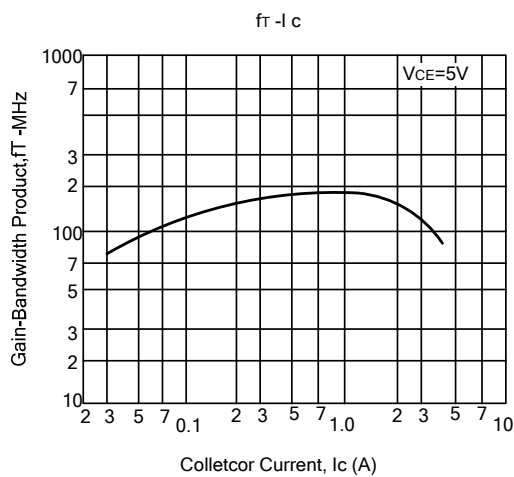
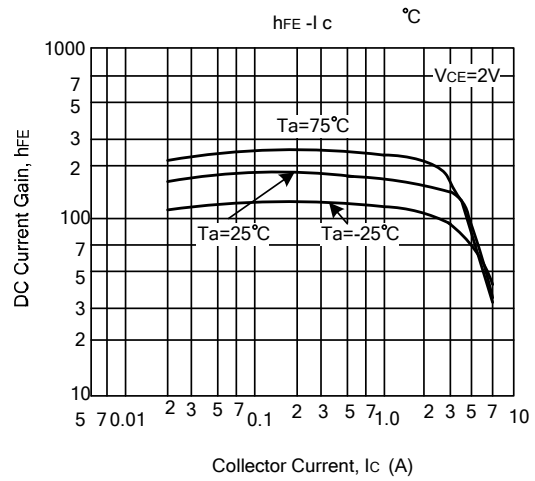
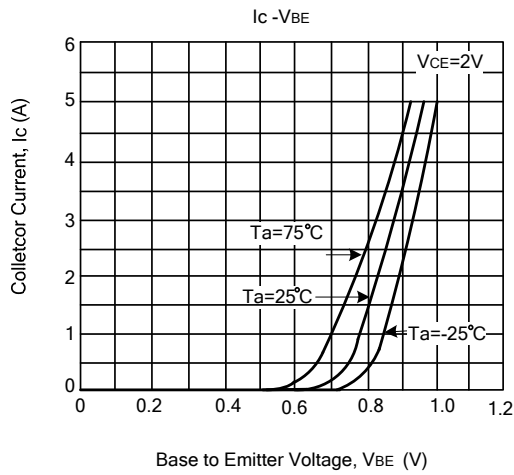
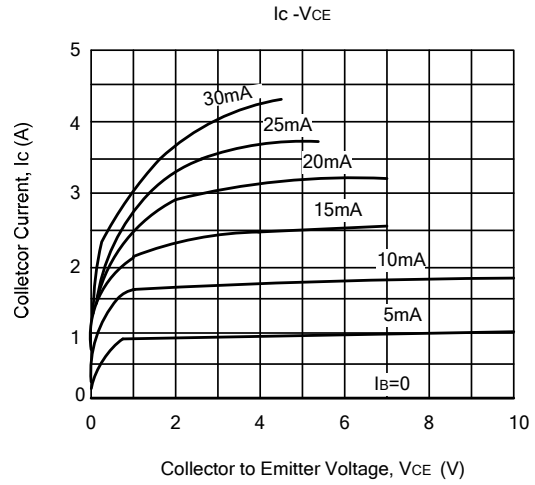
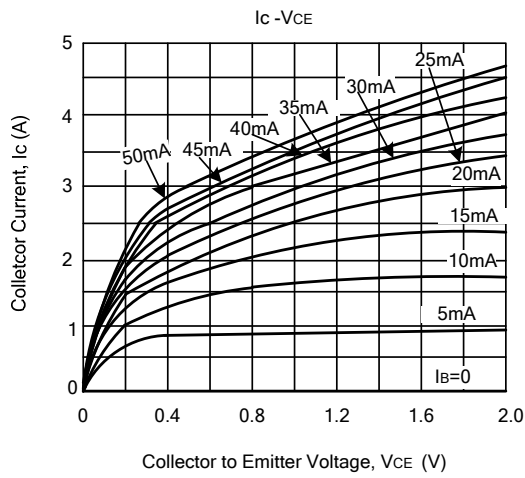
RANK	Q	R	S	T
RANGE	70 ~ 140	100 ~ 200	140 ~ 280	200 ~ 400

■ TEST CIRCUIT

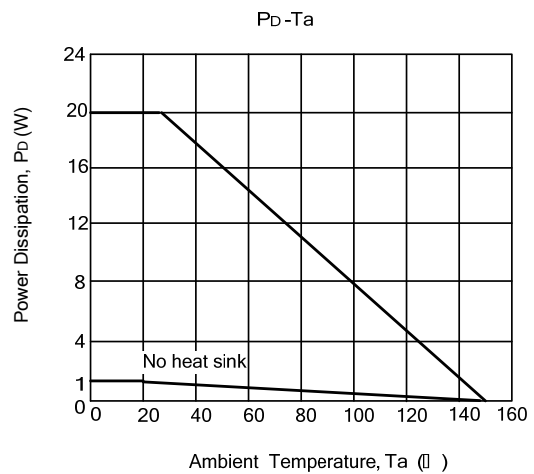
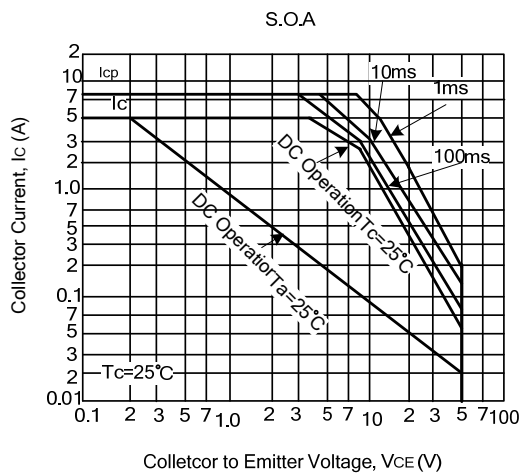
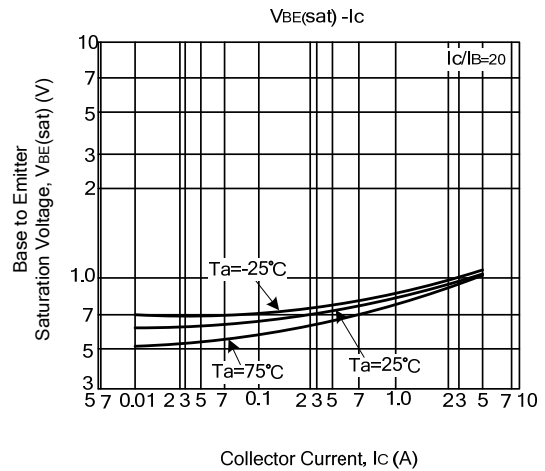
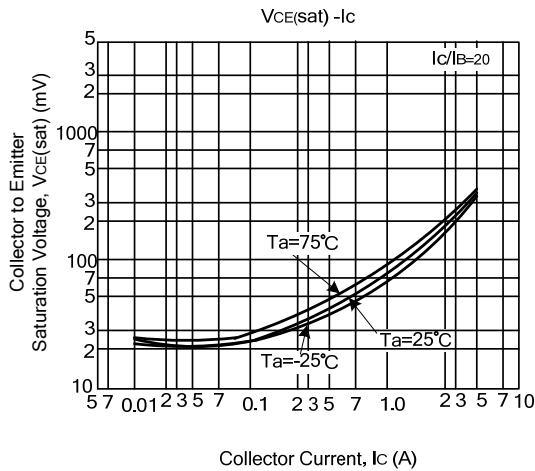


(Unit : (resistance : Ω , capacitance : F))

■ TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS(Cont.)



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