



2SD1803

NPN SILICON TRANSISTOR

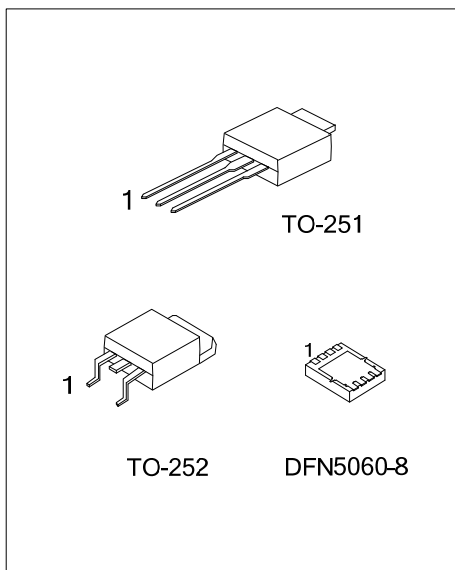
HIGH CURRENT SWITCHING APPLICATION

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
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
2SD1803L-x-TM3-T	2SD1803G-x-TM3-T	TO-251	B	C	E	-	-	-	-	-	Tube
2SD1803L-x-TN3-R	2SD1803G-x-TN3-R	TO-252	B	C	E	-	-	-	-	-	Tape Reel
2SD1803L-x-K08-5060-R	2SD1803G-x-K08-5060-R	DFN5060-8	E	E	E	B	C	C	C	C	Tape Reel

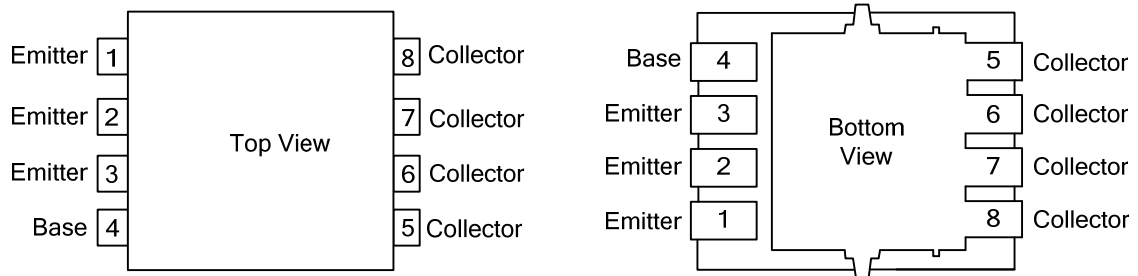
Note: Pin Assignment: C: Collector B: Base E: Emitter

<p>2SD1803G-x-TM3-T</p>	<p>(1) R: Tape Reel, T: Tube (2) TM3: TO-251, TN3: TO-252, K08-5060: DFN5060-8 (3) x: refer to Classification of h_{FE1} (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING

TO-251 / TO-252	DFN5060-8

■ PIN CONFIGURATION



DFN5060-8

■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

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
Base Current	DC	I_B	1	A
	Pulse	I_{BP}	2	A
Collector Current	DC	I_C	5	A
	Pulse	I_{CM}	8	A
Power Dissipation	$T_A=25^\circ\text{C}$	P_D	1	W
	$T_C=25^\circ\text{C}$		20	W
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.

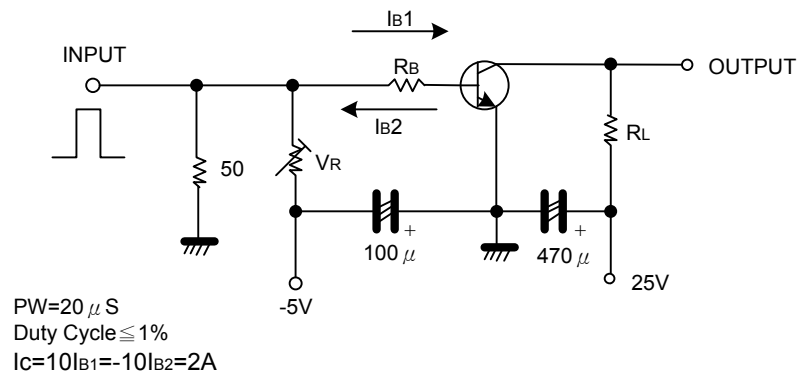
■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=10\mu\text{A}$, $I_E=0$	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_{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			
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}

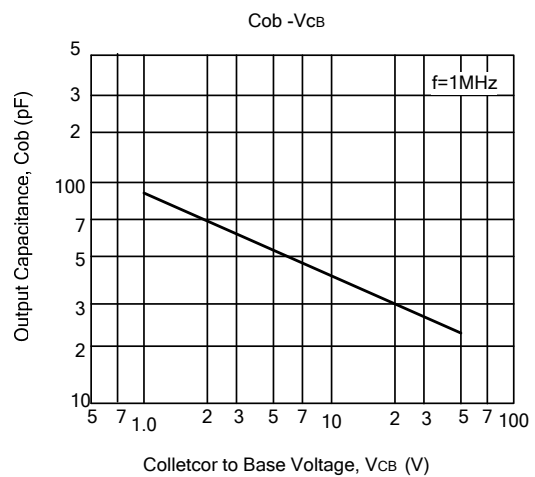
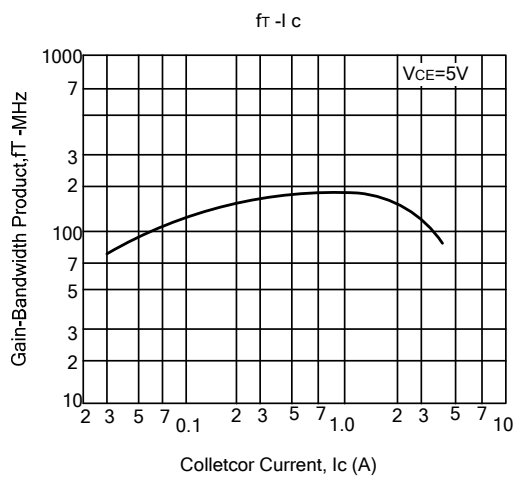
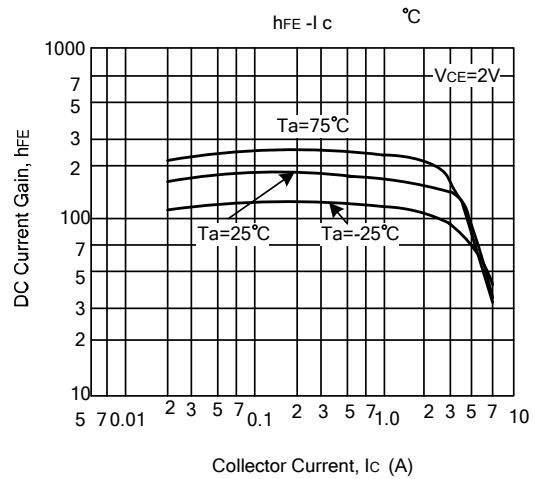
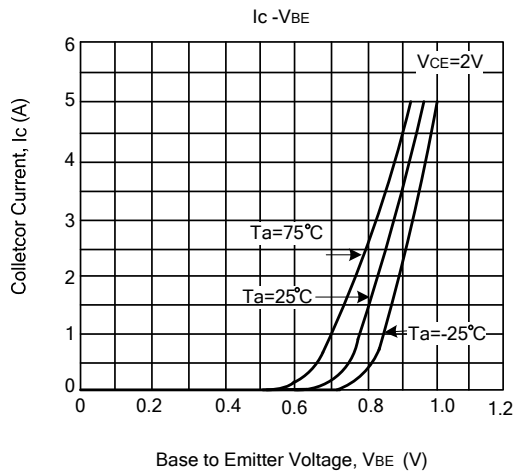
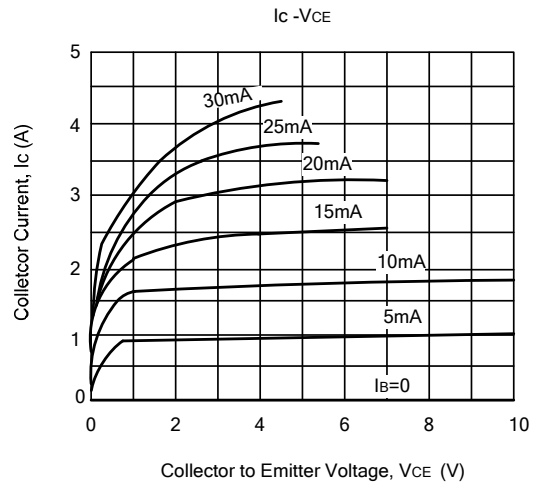
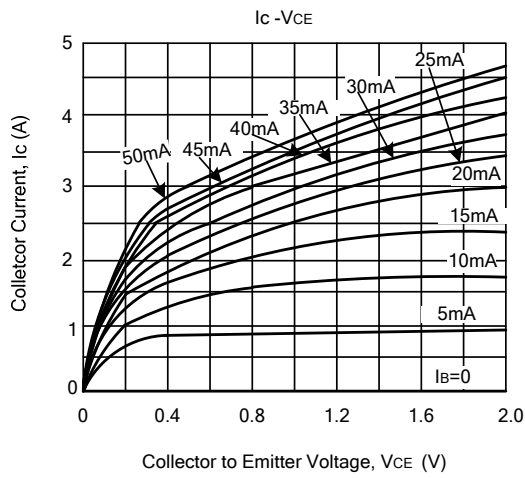
RANK	Q	R	S	T
RANGE	70 ~ 140	100 ~ 200	140 ~ 280	200 ~ 400

■ TEST CIRCUIT

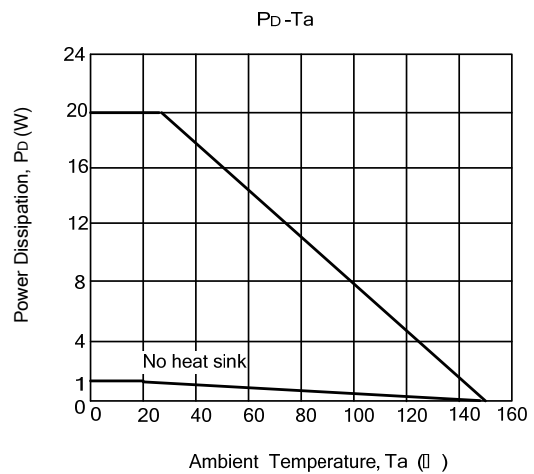
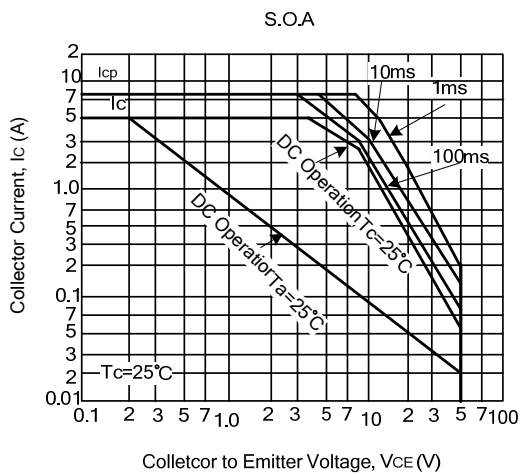
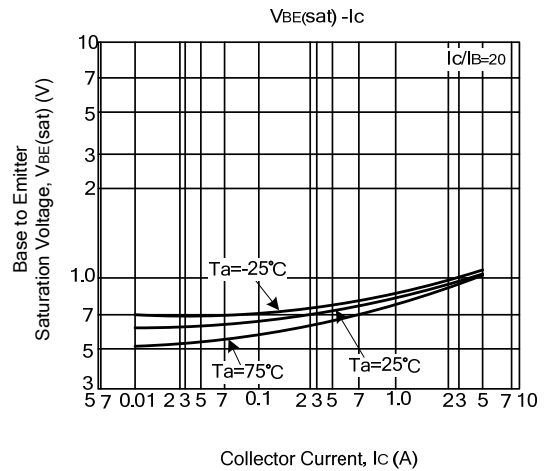
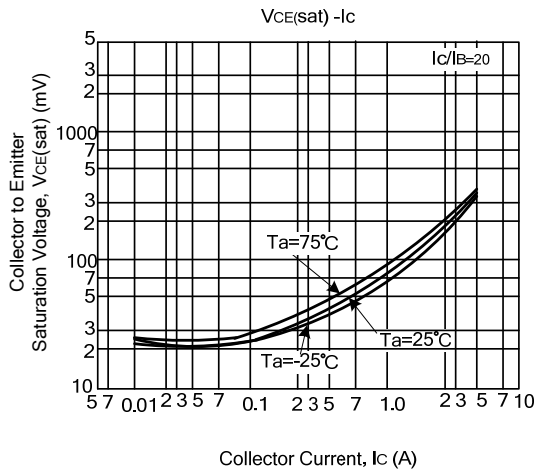


(Unit : (resistance : Ω , capacitance : F))

■ TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (Cont.)



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