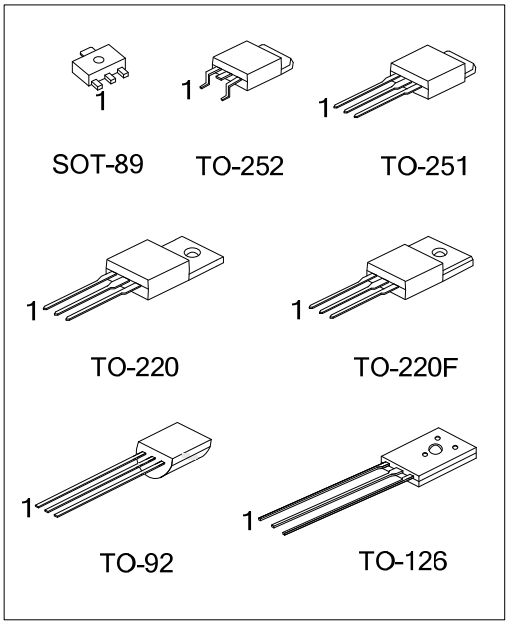
2SD1060

NPN SILICON TRANSISTOR

NPN PLANAR SILICON TRANSISTOR



■ FEATURES

* Low collector-to-emitter saturation voltage:
  $V_{CE(SAT)}$=0.4V max/I_C=3A, I_B=0.3A

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SD1060L-x-AB3-R	2SD1060G-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SD1060L-x-T60-K	2SD1060G-x-T60-K	TO-126	B	C	E	Bulk
2SD1060L-x-T92-B	2SD1060G-x-T92-B	TO-92	E	C	B	Tape Box
2SD1060L-x-T92-K	2SD1060G-x-T92-K	TO-92	E	C	B	Bulk
2SD1060L-x-T92-R	2SD1060G-x-T92-R	TO-92	E	C	B	Tape Reel
2SD1060L-x-TA3-T	2SD1060G-x-TA3-T	TO-220	B	C	E	Tube
2SD1060L-x-TF3-T	2SD1060G-x-TF3-T	TO-220F	B	C	E	Tube
2SD1060L-x-TM3-T	2SD1060G-x-TM3-T	TO-251	B	C	E	Tube
2SD1060L-x-TN3-T	2SD1060G-x-TN3-T	TO-252	B	C	E	Tube
2SD1060L-x-TN3-R	2SD1060G-x-TN3-R	TO-252	B	C	E	Tape Reel

2SD1060L-x-AB3-R
- (1)Packing Type
- (2)Package Type
- (3)Rank
- (4)Lead Plating

(1)B: Tape Box, K: Bulk, R: Tape Reel, T: Tube
(2) AB3: SOT-89, T60: TO-126, T92: TO-92, TA3: TO-220, TM3: TO-251, TN3: TO-252
(3) x: refer to Classification of h_{FE1}
(4) L: Lead Free, G: Halogen Free

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector to Base Voltage		V_{CBO}	60	V
Collector to Emitter Voltage		V_{CEO}	50	V
Emitter to Base Voltage		V_{EBO}	6	V
Collector Current		I_C	5	A
Collector Current (Pulse)		I_{CP}	9	A
Collector Dissipation	SOT-89	P_C	500	mW
	TO-126/TO-251/TO-252		1	W
	TO-220/TO-220F		2	W
	TO-92		625	mW
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-40 ~ +150	°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.

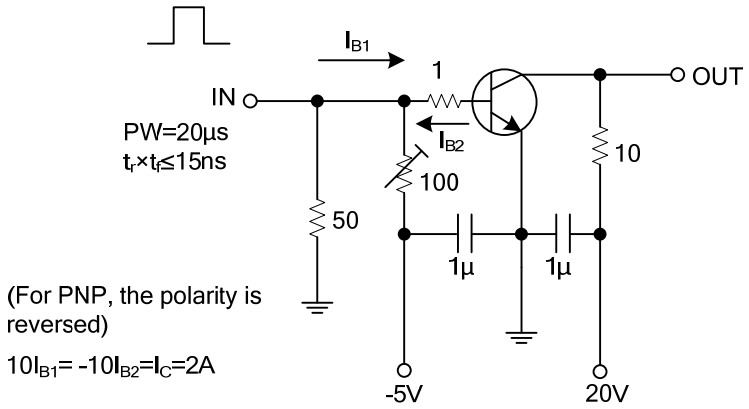
■ ELECTRICAL CHARACTERISTICS (T_A=25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-to-Base Breakdown Voltage	BV_{CBO}	I_C =1mA, I_E=0	60			V
Collector-to-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA, R_{BE} =∞	50			V
Emitter-to-Base Breakdown Voltage	BV_{EBO}	I_C =0, I_E=1mA	6			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=40V, I_E=0			0.1	mA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=4V, I_C=0			0.1	mA
DC Current Gain	h_{FE1}	V_{CE}=2V, I_C=1A	70		360	
	h_{FE2}	V_{CE}=2V, I_C=3A	30			
Gain Bandwidth Product	f_T	V_{CE} =5V, I_C =1A		30		MHZ
Output Capacitance	C_{ob}	V_{CB} =10V, f=1MHz		100		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=3A, I_B=0.3A			0.4	V
Turn-ON Time	t_{ON}	See specified test circuit		0.1		μs
Storage Time	t_{STG}	See specified test circuit		1.4		μs
Fall Time	t_F	See specified test circuit		0.2		μs

■ CLASSIFICATION of h_{FE1}

RANK	Q	R	S
RANGE	70-140	100-200	180-360

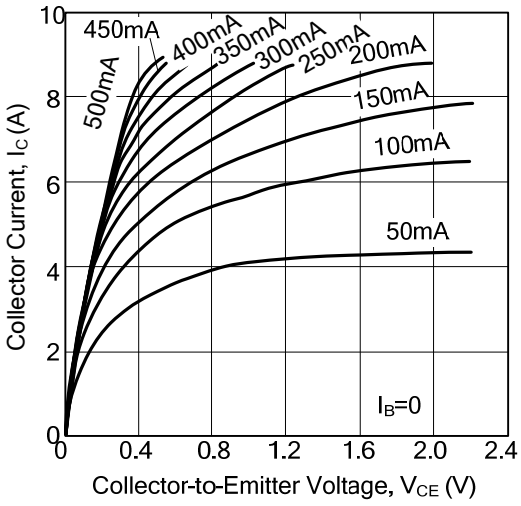
■ SWITCHING TIME TEST CIRCUIT



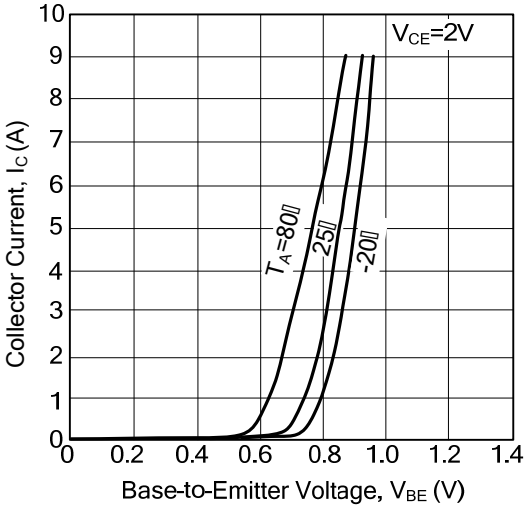
Unit (resistance: Ω, capacitance: F)

■ TYPICAL CHARACTERISTICS

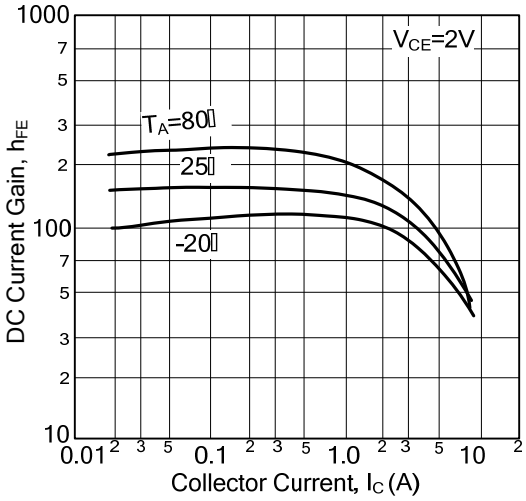
Collector Current vs. Collector-to-Emitter Voltage



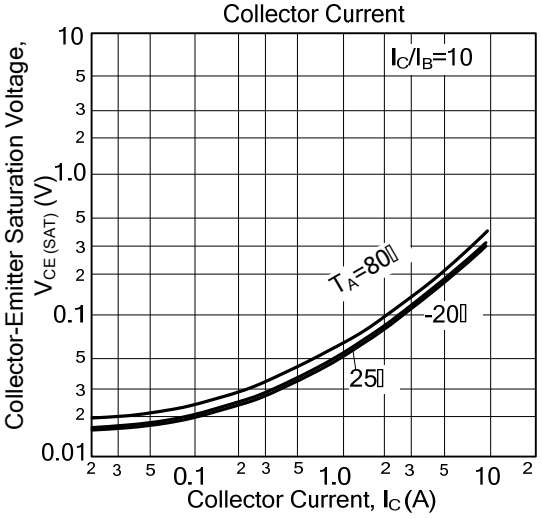
Collector Current vs. Base-to-Emitter Voltage



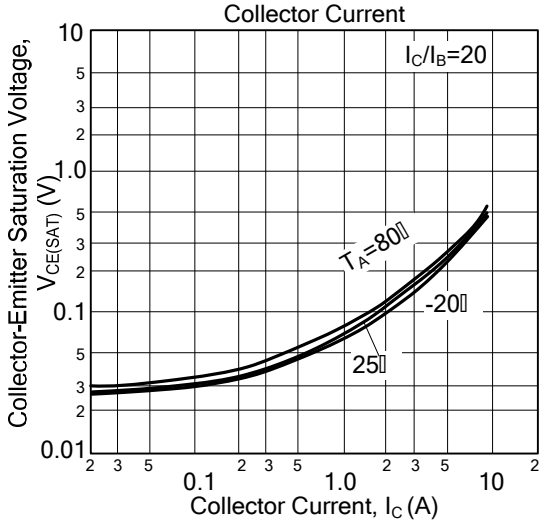
DC Current Gain vs. Collector Current



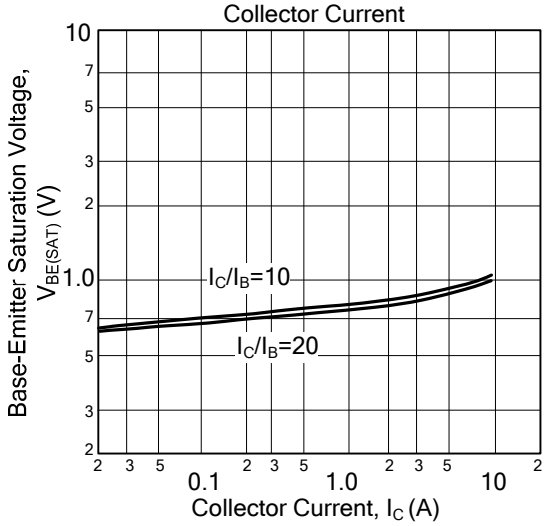
Collector-Emitter Saturation Voltage vs. Collector Current



Collector-Emitter Saturation Voltage vs. Collector Current



Base-Emitter Saturation Voltage vs. Collector Current



■ TYPICAL CHARACTERISTICS(Cont.)