



2SD1691

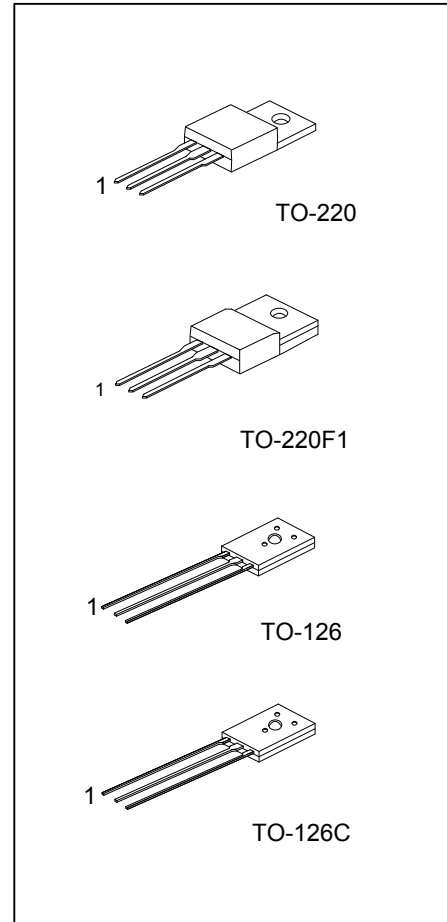
NPN SILICON TRANSISTOR

LOW COLLECTOR
SATURATION VOLTAGE
LARGE CURRENT

■ FEATURES

*High Power Dissipation

*Complementary to 2SB1151



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free Plating	Halogen Free		1	2	3	
2SD1691L-x-T60-K	2SD1691G-x-T60-K	TO-126	E	C	B	Bulk
2SD1691L-x-T6C-K	2SD1691G-x-T6C-K	TO-126C	E	C	B	Bulk
2SD1691L-x-TA3-T	2SD1691G-x-TA3-T	TO-220	B	C	E	Tube
2SD1691L-x-TF1-T	2SD1691G-x-TF1-T	TO-220F1	B	C	E	Tube

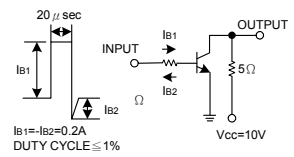
<p>2SD1691G-x-T60-K</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Rank</p> <p>(4)Halogen Free</p>	<p>(1) K: Bulk, T: Tube</p> <p>(2) T60: TO-126, T6C: TO-126C, TA3: TO-220, TF1: TO-220F1</p> <p>(3) x: refer to Classification of h_{FE2}</p> <p>(4) L: Lead Free Plating, G: Halogen Free</p>
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■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER		SYMBOL	RATING	UNIT
Collector-Base Voltage		V _{CBO}	60	V
Collector-Emitter Voltage		V _{CEO}	60	V
Emitter-Base Voltage		V _{EBO}	7	V
Collector Current	DC	I _c	5	A
	Pulse (PW ≤ 10ms, Duty Cycle ≤ 50%)	I _{cp}	8	
Base Current		I _B	1	A
Collector Power Dissipation (Tc=25°C)	TO-126/ TO-126C	P _c	20	W
	TO-220F1		23	
	TO-220		54	
Junction Temperature		T _J	150	°C
Storage Temperature Range		T _{STG}	-55 ~ +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 (Ta=25°C, unless otherwise specified)

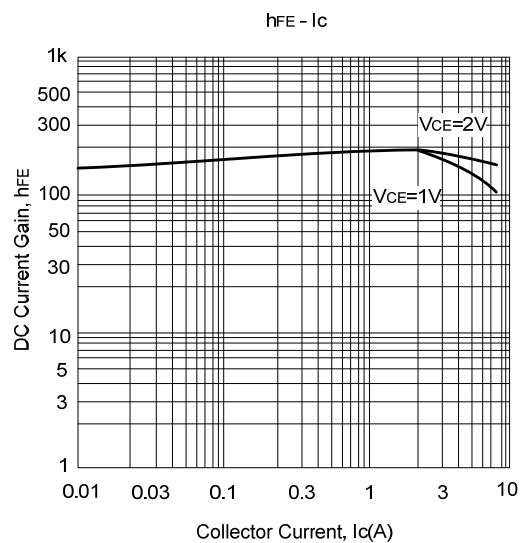
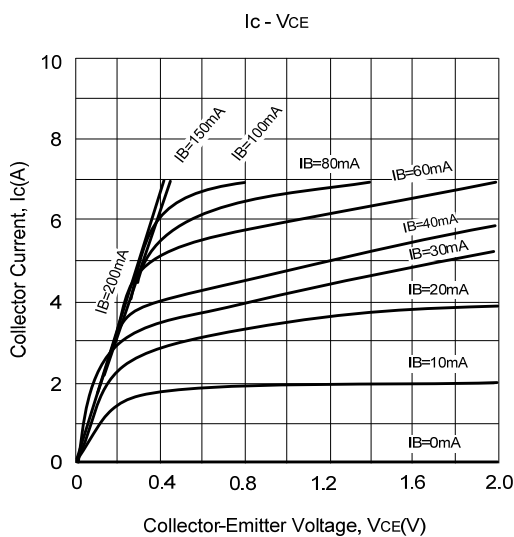
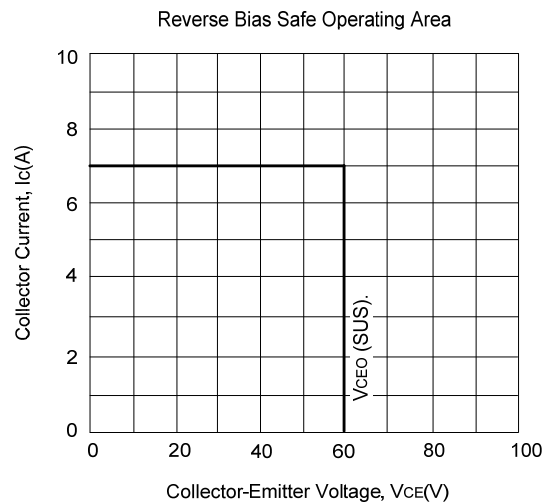
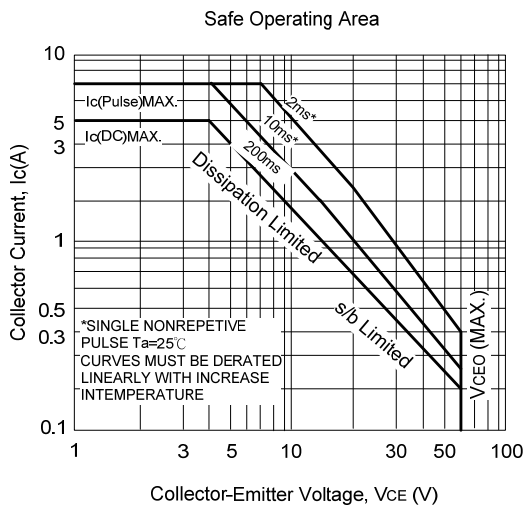
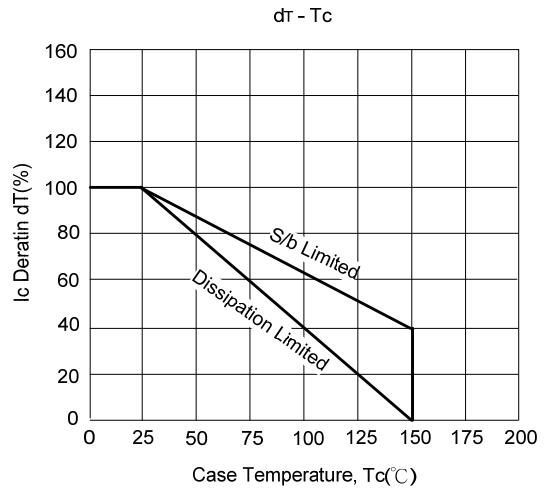
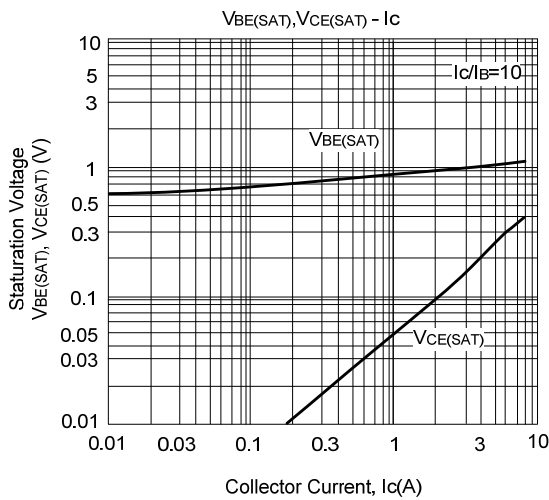
CHARACTERISTIC		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-off Current		I _{CBO}	V _{CB} =50V, I _E =0			10	μA
Emitter Cut-off Current		I _{EBO}	V _{EB} =7V, I _C =0			10	μA
DC Current Gain		h _{FE1}	V _{CE} =1V, I _C =0.1A	60			
		h _{FE2}	V _{CE} =1V, I _C =2A	160		400	
		h _{FE3}	V _{CE} =2V, I _C =5A	50			
Collector-Emitter Saturation Voltage		V _{CE(SAT)} (Note)	I _C =2A, I _B =0.2A		0.1	0.3	V
Base-Emitter Saturation Voltage		V _{BE(SAT)} (Note)	I _C =2A, I _B =0.2A		0.9	1.2	V
Switching Time	Turn On Time	T _{ON}	 <p>20 μs sec I_{B1} I_{B2} INPUT OUTPUT 5 Ω V_{CC}=10V I_{B1}=I_{B2}=0.2A DUTY CYCLE ≤ 1%</p>		0.2	1	μs
	Storage Time	T _{STG}			1.1	2.5	
	Fall Time	T _F			0.2	1	

Note: Pulse test: PW ≤ 50μs, Duty Cycle ≤ 2% Pulse

■ CLASSIFICATION OF h_{FE2}

RANK	O	Y
RANGE	160-320	200-400

TYPICAL CHARACTERISTICS



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