



2SD1691

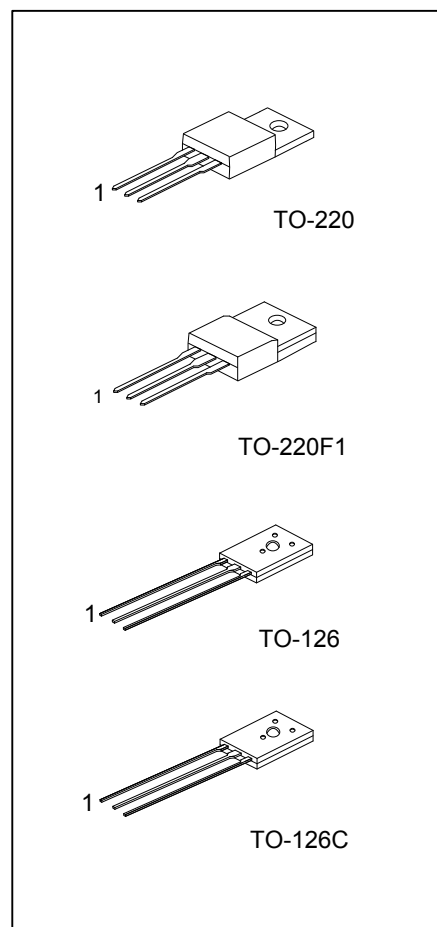
NPN SILICON TRANSISTOR

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

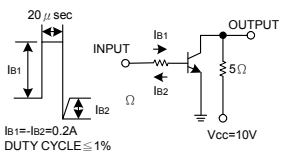
2SD1691G-x-T60-K	(1)Packing Type (2)Package Type (3)Rank (4)Halogen Free	(1) K: Bulk, T: Tube (2) T60: TO-126, T6C: TO-126C, TA3: TO-220, TF1: TO-220F1 (3) x: refer to Classification of h_{FE2} (4) L: Lead Free Plating, G: Halogen Free
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■ ABSOLUTE MAXIMUM 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 ($PW \leq 10ms, Duty\ Cycle \leq 50\%$)	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)

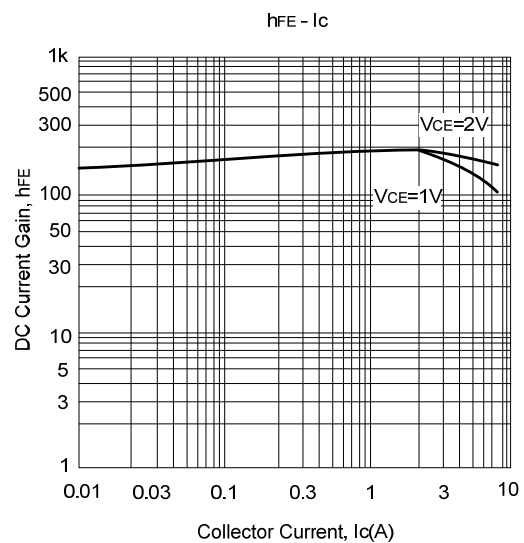
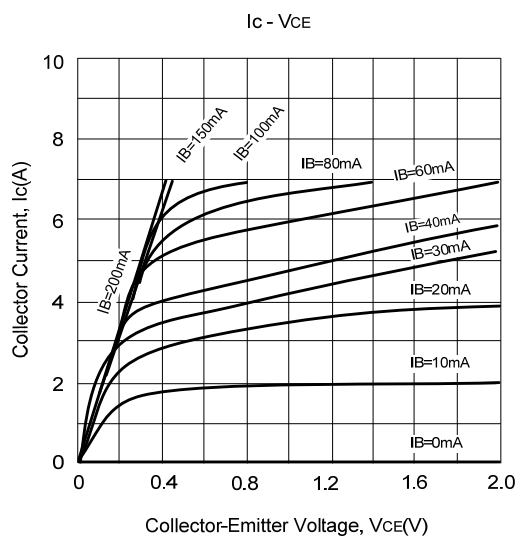
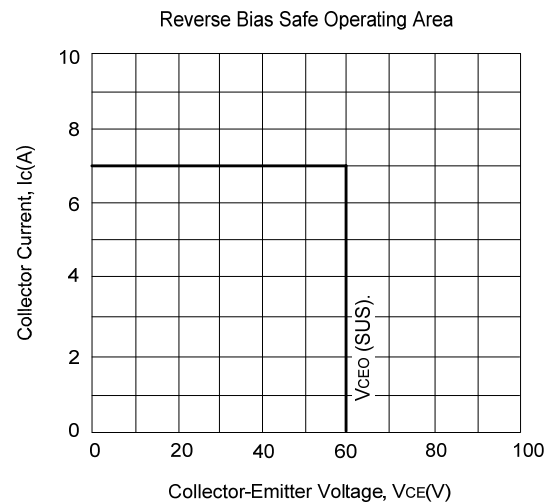
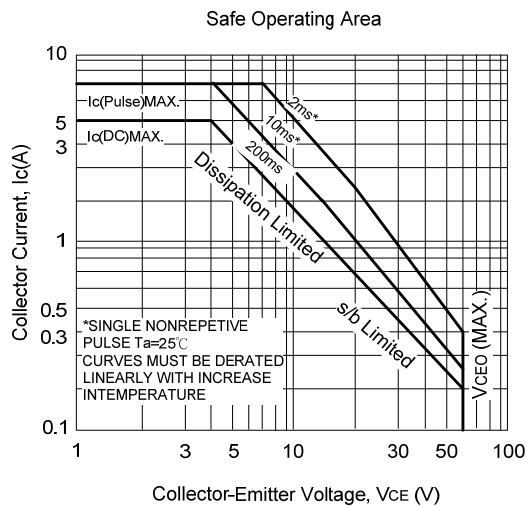
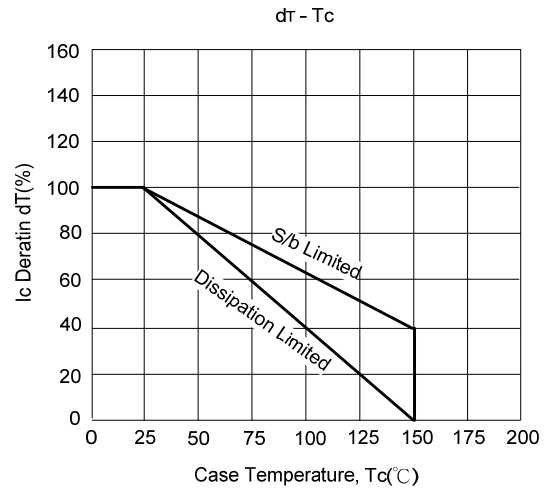
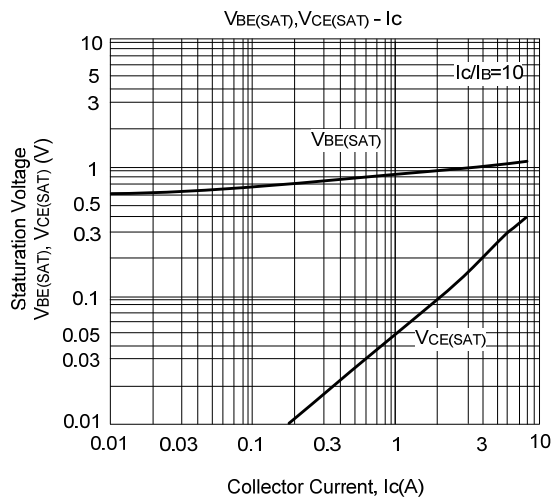
CHARACTERISTIC		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB}=50V, I_E=0$			10	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB}=7V, I_C=0$			10	μA
DC Current Gain		h_{FE1}	$V_{CE}=1V, I_C=0.1A$	60			
		h_{FE2}	$V_{CE}=1V, I_C=2A$	160		400	
		h_{FE3}	$V_{CE}=2V, I_C=5A$	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}	 20 μ sec INPUT I_{B1} I_{B2} Ω OUTPUT $I_{B1}=I_{B2}=0.2A$ DUTY CYCLE $\leq 1\%$ $V_{CC}=10V$		0.2	1	μs
	Storage Time	T_{STG}			1.1	2.5	
	Fall Time	T_F			0.2	1	

Note: Pulse test: $PW \leq 50\mu s$, Duty Cycle $\leq 2\%$ Pulse

■ CLASSIFICATION OF h_{FE2}

RANK	O	Y
RANGE	160-320	200-400

TYPICAL CHARACTERISTICS



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