

2SD1803I
Rev.E Mar.-2016

KF \$) , (E GE Silicon NPN transistor in a TO-251 Plastic Package.

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Low $V_{CE(sat)}$, high current and high f_T , excellent linearity of h_{FE} , fast switching time.

Relay drivers, high-speed inverters, and other general high-current switching applications.

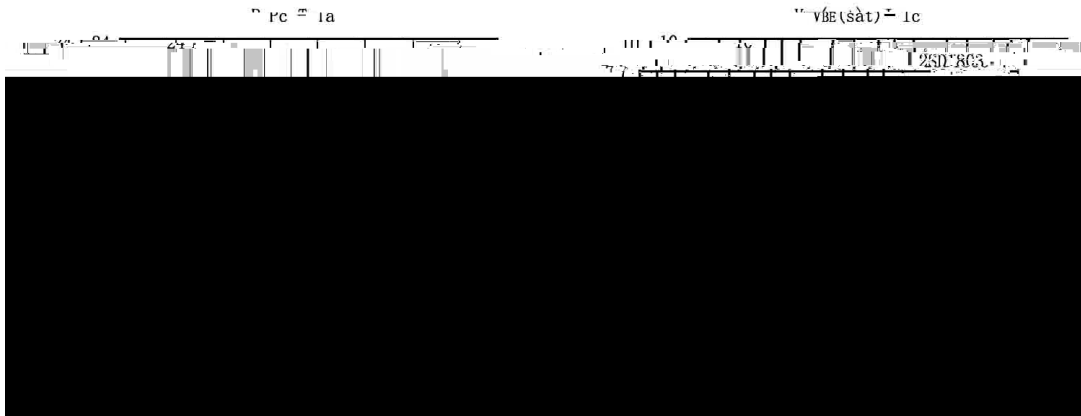
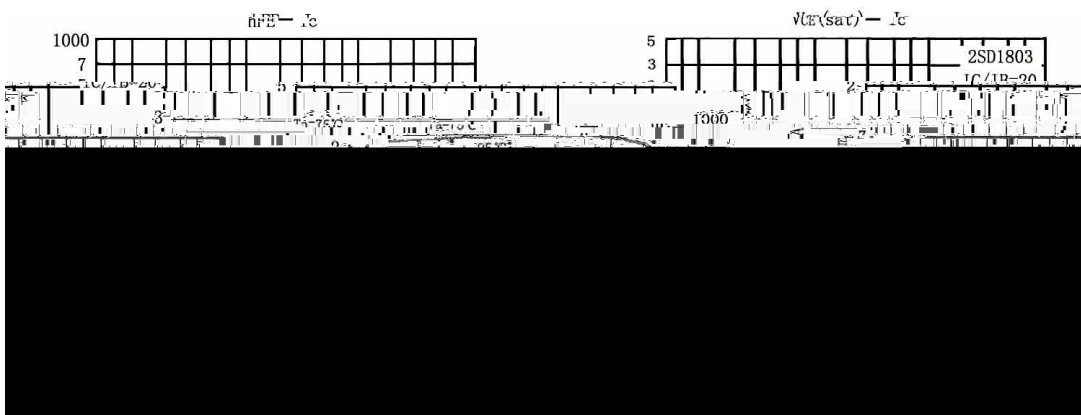
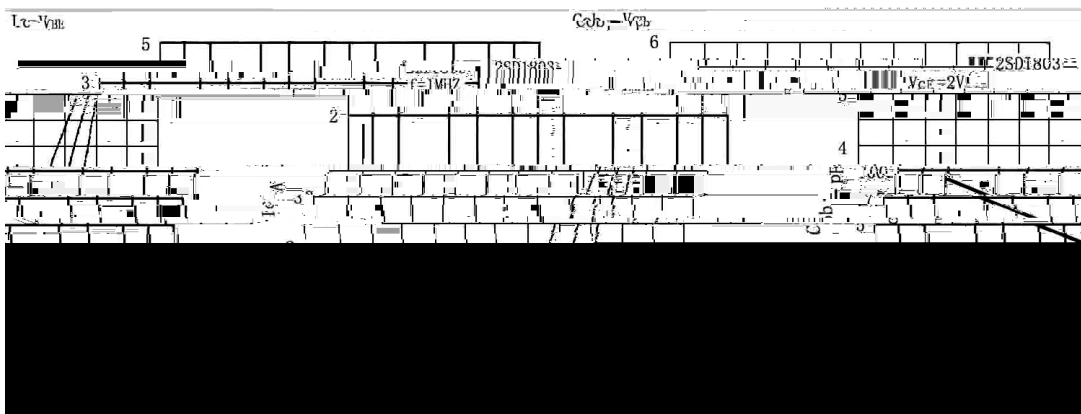
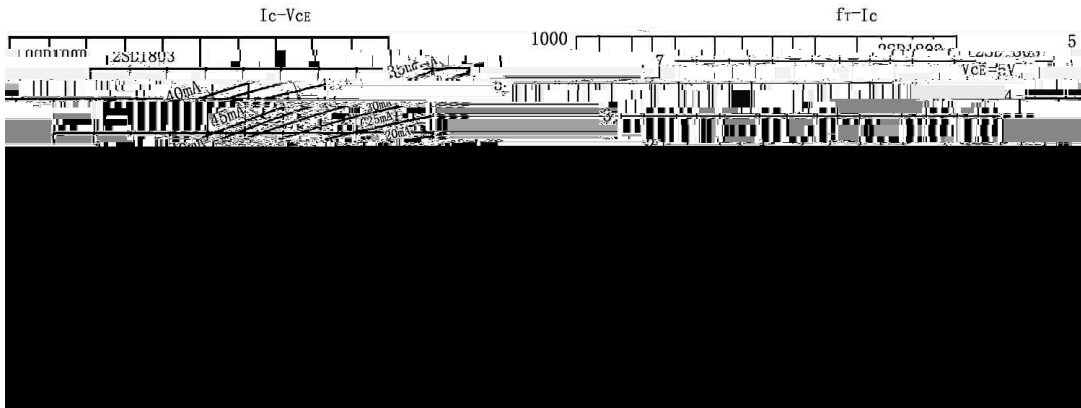
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	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 - Continuous	I_C	5	A
Collector Current – Continuous(Pulse)	I_{CP}	8	A
Collector Power Dissipation	P_C	1.0	W
Collector Power Dissipation	$P_C(T_C=25)$	20	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

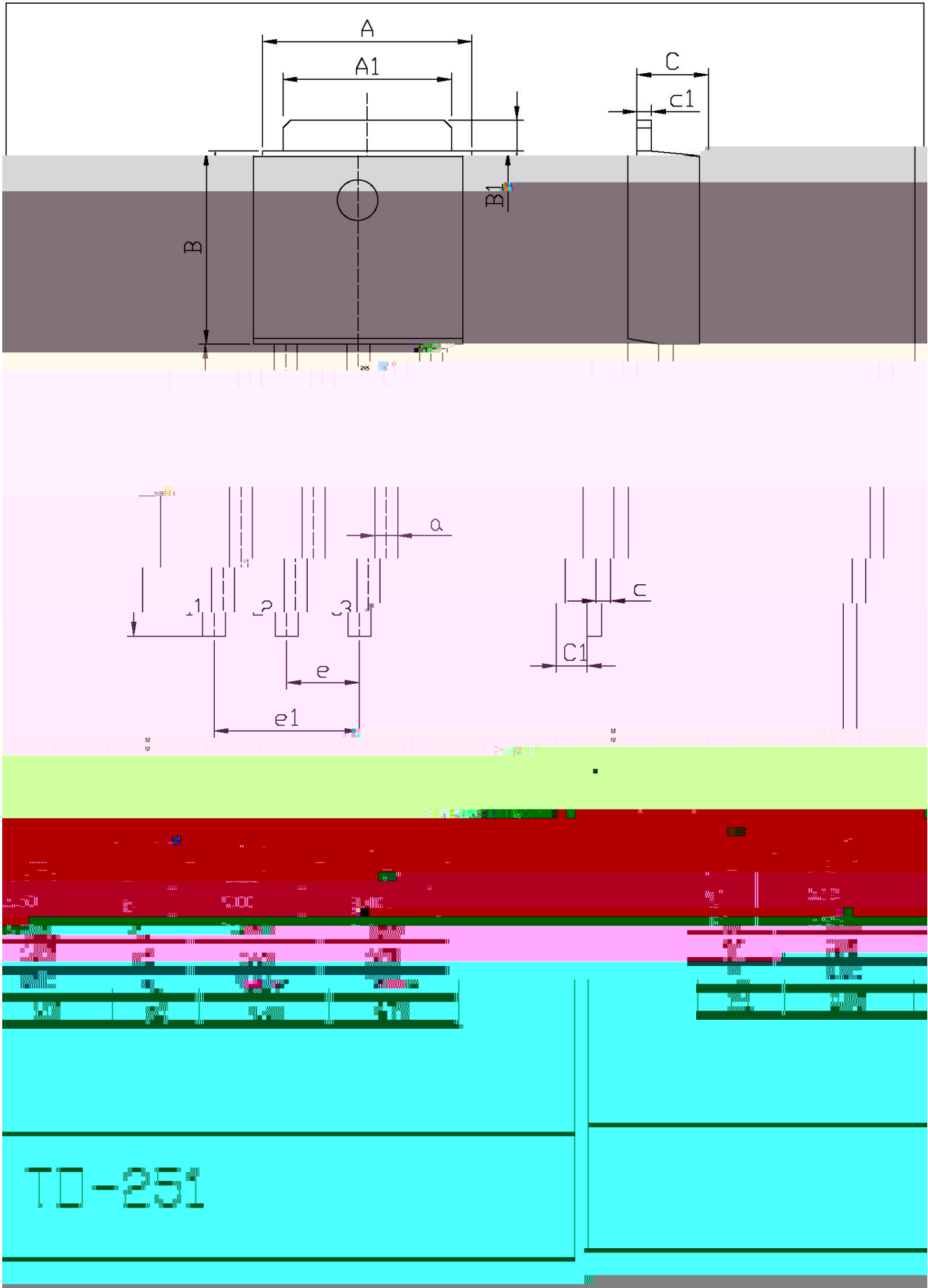
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=10\mu A$ $I_E=0$	60			V
Collector to Emitter Breakdown Voltage	V_{CBO}	$I_C=1mA$ $R_{BE}=\infty$	50			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=10\mu A$ $I_C=0$	6			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=40V$ $I_E=0$			1.0	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4.0V$ $I_C=0$			1.0	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2.0V$ $I_C=0.5A$	70		400	
	$h_{FE(2)}$	$V_{CE}=2.0V$ $I_C=4.0A$	35			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3.0A$ $I_B=0.15A$		0.22	0.4	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=3.0A$ $I_B=0.15A$		0.95	1.3	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $I_C=1.0A$		180		MHZ
Collector output capacitance	C_{ob}	$V_{CB}=10V$ $f=1MHz$		40		pF
Turn-On Time	t_{on}	$I_C=10I_{B1}=-10I_{B2}=2.0A$		50		ns
Storage Time	t_{stg}			500		ns
Fall Time	t_f			20		ns

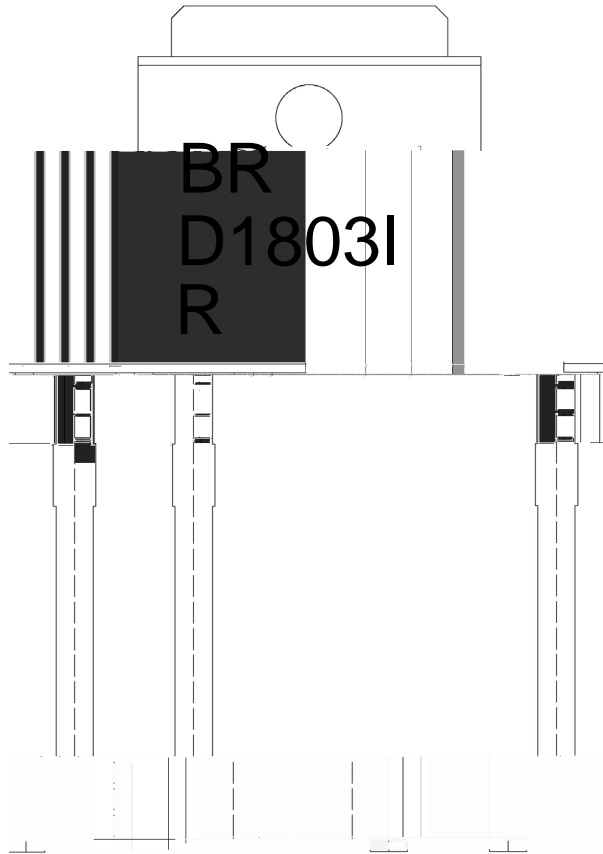
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



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- Note:
- BR: Company Code
- D1803I: Product Type.
- R: h_{FE} Classifications Symbol
- ****: Lot No. Code, code change with Lot No.

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