



## 2SD1520(L)/(S)

### Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	100	V
Collector to emitter voltage	$V_{CEO}$	80	V
Emitter to base voltage	$V_{EBO}$	7	V
Collector current	$I_C$	4	A
Collector peak current	$I_{C(\text{peak})}$	8	A
Collector power dissipation	$P_C^{*1}$	20	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C
C to E diode forward current	$I_D^{*1}$	4	A

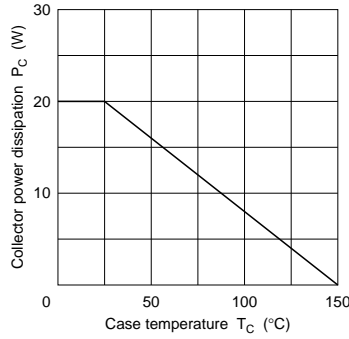
Note: 1. Value at  $T_C = 25^\circ\text{C}$ .

### Electrical Characteristics (Ta = 25°C)

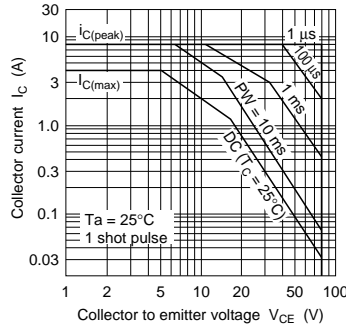
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	80	—	—	V	$I_C = 25 \text{ mA}$ , $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 50 \text{ mA}$ , $I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	100	$\mu\text{A}$	$V_{CB} = 80 \text{ V}$ , $I_E = 0$
	$I_{CEO}$	—	—	10	$\mu\text{A}$	$V_{CE} = 60 \text{ V}$ , $R_{BE} = \infty$
DC current transfer ratio	$h_{FE}$	1000	—	20000		$V_{CE} = 3 \text{ V}$ , $I_C = 2 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(\text{sat})1}$	—	—	1.5	V	$I_C = 2 \text{ A}$ , $I_B = 4 \text{ mA}^{*1}$
	$V_{CE(\text{sat})2}$	—	—	3.0	V	$I_C = 4 \text{ A}$ , $I_B = 40 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{BE(\text{sat})1}$	—	—	2.0	V	$I_C = 2 \text{ A}$ , $I_B = 4 \text{ mA}^{*1}$
	$V_{BE(\text{sat})2}$	—	—	3.5	V	$I_C = 4 \text{ A}$ , $I_B = 40 \text{ mA}^{*1}$
C to E diode forward voltage	$V_D$	—	—	3.0	V	$I_D = 4 \text{ A}$
Turn on time	Ton	—	0.5	—	$\mu\text{s}$	$I_C = 2 \text{ A}$ , $I_{B1} = -I_{B2} = 4 \text{ mA}$
Storage time	Tstg	—	4.5	—	$\mu\text{s}$	
Fall time	Tf	—	1.0	—	$\mu\text{s}$	

Note: 1. Pulse test.

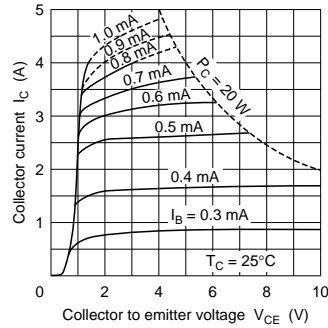
Maximum Collector Dissipation Curve



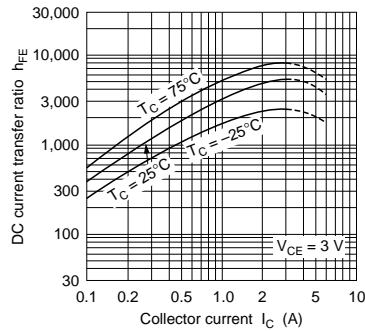
Area of Safe Operation



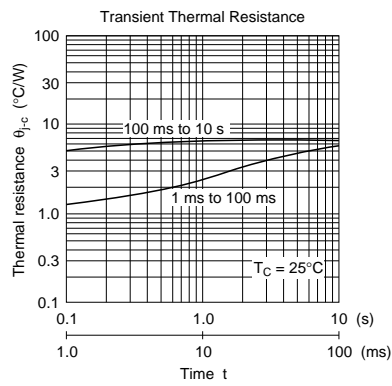
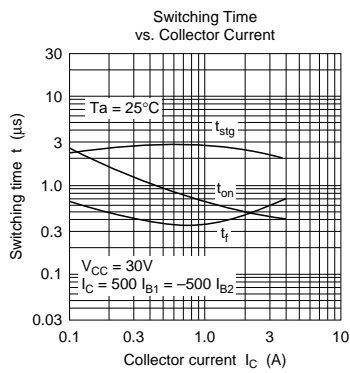
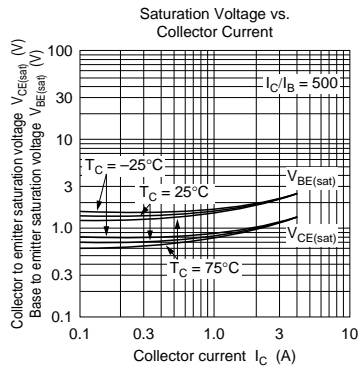
Typical Output Characteristics



DC Current Transfer Ratio vs. Collector Current



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