SDC06

NPN

With built-in avalanche diode

External dimensions Ⓔ ··· SD

Absolute maximum ratings

(Ta=25°C)

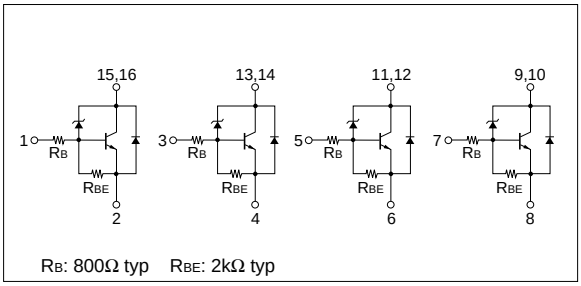
Symbol	Ratings	Unit
V_{CBO}	30 to 45	V
V_{CEO}	30 to 45	V
V_{EBO}	6	V
I_C	2	A
I_{CP}	3 (PW≤1ms, Du≤10%)	A
I_B	30	mA
P_T	3 (Ta=25°C)	W
T_j	150	°C
T_{stg}	–40 to +150	°C
θ_{j-a}	41.6	°C/W

Electrical characteristics

(Ta=25°C)

Symbol	Specification			Unit	Conditions
	min	typ	max		
I_{CBO}			10	μA	V_{CB}=30V
I_{EBO}	1.2		2.8	mA	V_{EB}=6V
V_{CEO}	30		45	V	I_C=10mA
h_{FE}	400	700	2000		V_{CE}=4V, I_C=0.5A
V_{CE}(sat)			0.2	V	I_C=0.5A, I_B=5mA
			0.6	V	I_C=1A, I_B=5mA
V_{FEC}			2.0	V	I_{FEC}=1A
t_{on}		1.2		μs	V_{CC}≒10V,
t_{stg}		18.0		μs	I_C=0.5A,
t_f		3.6		μs	I_{B1}=5mA, I_{B2}=0A
f_T		20		MHz	V_{CE}=12V, I_E=–0.2A
Cob		50		pF	V_{CB}=10V, f=1MHz
$E_{S/B}$	40			mJ	L=10mH, Single pulse

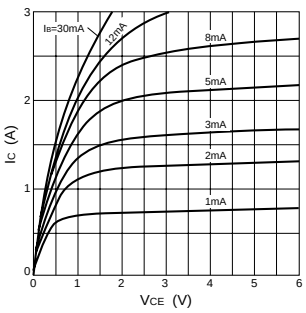
■Equivalent circuit diagram



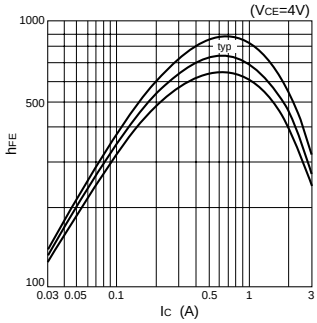
RB: 800Ω typ RBE: 2kΩ typ

Characteristic curves

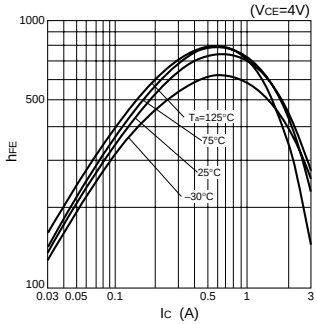
I_C-V_{CE} Characteristics (Typical)



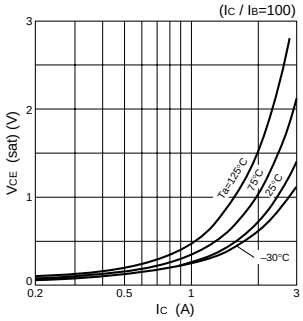
h_{FE}-I_C Characteristics (Typical)



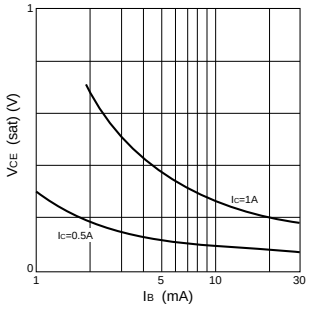
h_{FE}-I_C Temperature Characteristics (Typical)



V_{CE}(sat)-I_C Temperature Characteristics (Typical)

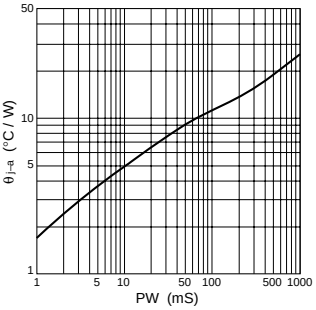


V_{CE}(sat)-I_B Characteristics (Typical)

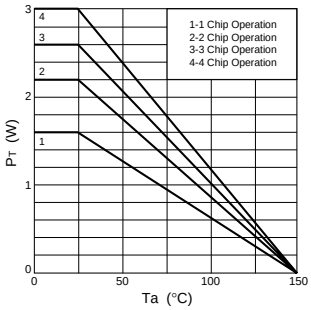


I_C-V_{BE} Temperature Characteristics (Typical)

θ_{j-a}-PW Characteristics



P_T-T_a Characteristics



Safe Operating Area (SOA)