STA475A

NPN Darlington
With built-in avalanche diode

External dimensions Ⓓ ··· STA400

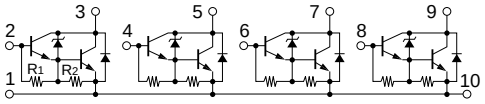
Absolute maximum ratings (Ta=25°C)

Symbol	Ratings	Unit
V_{CBO}	100±15	V
V_{CEO}	100±15	V
V_{EBO}	6	V
I_C	2	A
I_{CP}	4 (PW≤1ms, Du≤25%)	A
I_B	0.5	A
P_T	4 (Ta=25°C)	W
	20 (Tc=25°C)	
T_j	150	°C
T_{stg}	–40 to +150	°C

Electrical characteristics (Ta=25°C)

Symbol	Specification min	typ	max	Unit	Conditions
I_{CBO}			10	μA	V_{CB}=85V
I_{EBO}			5	mA	V_{EB}=6V
V_{CEO}	85	100	115	V	I_C=10mA
h_{FE}	2000	5000	12000		V_{CE}=4V, I_C=1A
V_{CE}(sat)			1.5	V	I_C=1A, I_B=2mA
V_{BE}(sat)			2.2	V	
V_{FEC}			1.8	V	I_{FEC}=1A
t_{on}		0.6		μs	V_{CC}≒30V,
t_{stg}		3.0		μs	I_C=1A,
t_f		1.0		μs	I_{B1}=–I_{B2}=2mA

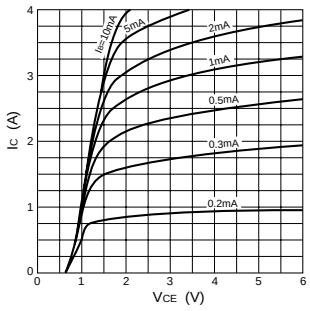
■Equivalent circuit diagram



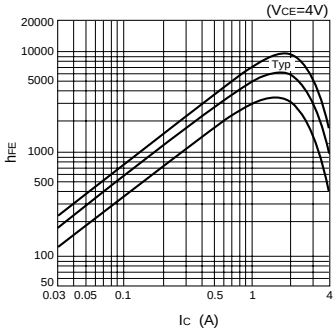
R1: 4kΩ typ R2: 150Ω typ

Characteristic curves

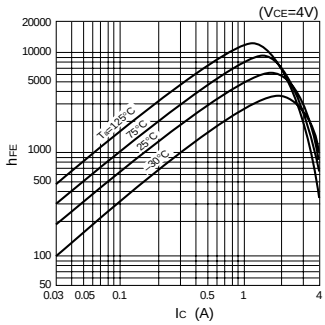
I_C-V_{CE} Characteristics (Typical)



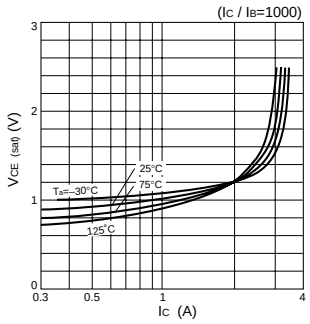
h_{FE}-I_C Characteristics (Typical)



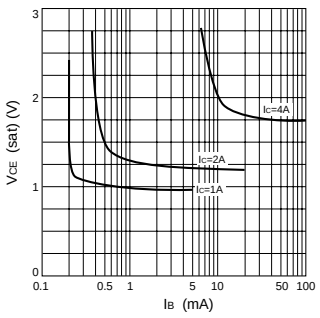
h_{FE}-I_C Temperature Characteristics (Typical)



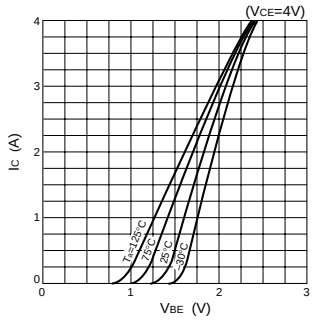
V_{CE}(sat)-I_C Temperature Characteristics (Typical)



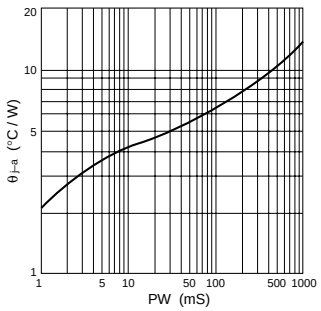
V_{CE}(sat)-I_B Characteristics (Typical)



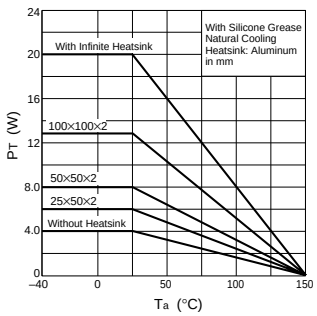
I_C-V_{BE} Temperature Characteristics (Typical)



$\theta_{j\text{-}a}$-PW Characteristics



P_T-T_a Characteristics



Safe Operating Area (SOA)