

# Power Transistor Array STA415A

## Absolute Maximum Ratings (Ta=25°C)

Symbol	Ratings	Unit
V <sub>CB0</sub>	35±5	V
V <sub>CE0</sub>	36±5	V
V <sub>EBO</sub>	6	V
I <sub>c</sub>	2 (pulse 3*)	A
I <sub>B</sub>	30	mA
P <sub>T</sub>	4 (Ta = 25°C)	W
	18 (Tc = 25°C)	W
T <sub>J</sub>	150	°C
T <sub>stg</sub>	-55 to +150	°C

\* P<sub>w</sub> ≤ 1ms, Duty ≤ 25%

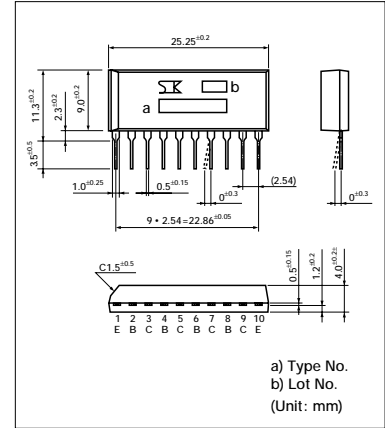
## Electrical Characteristics (Ta=25°C)

Symbol	Test Conditions	Ratings	Unit
I <sub>CB0</sub>	V <sub>CB</sub> = 30V	10max	μA
I <sub>EBO</sub>	V <sub>EB</sub> = 6V	2.7max	mA
V <sub>CE0</sub>	I <sub>c</sub> = 25mA	31 to 41	V
h <sub>FE</sub>	V <sub>CE</sub> = 4V, I <sub>c</sub> = 0.7A	400min	
V <sub>CE</sub> (sat)	I <sub>c</sub> = 0.5A, I <sub>B</sub> = 5mA	0.2max	V
	I <sub>c</sub> = 1A, I <sub>B</sub> = 5mA	0.5max	V
V <sub>FEC</sub>	I <sub>FEC</sub> = 2A	2.5max	V
R <sub>B</sub>		800±120	Ω
R <sub>BE</sub>		2.0±0.4	kΩ
Es/b	L = 10mH, single pulse	50min	mJ

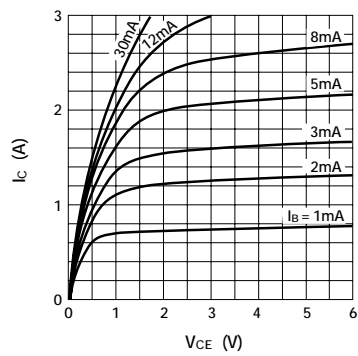
## Typical Switching Characteristics

V <sub>CC</sub> (V)	R <sub>L</sub> (Ω)	I <sub>c</sub> (A)	V <sub>BB1</sub> (V)	V <sub>BB2</sub> (V)	I <sub>B1</sub> (mA)	I <sub>B2</sub> (mA)	t <sub>on</sub> (μs)	t <sub>stg</sub> (μs)	t <sub>f</sub> (μs)
12	12	1	10	-5	5	0	1.0	8.5	2.5

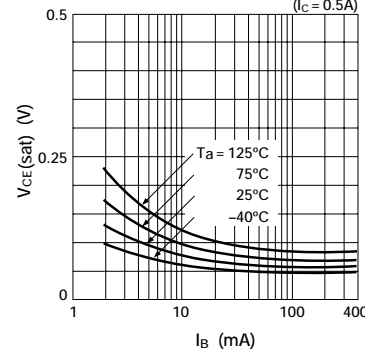
## External Dimensions STA4 (LF412)



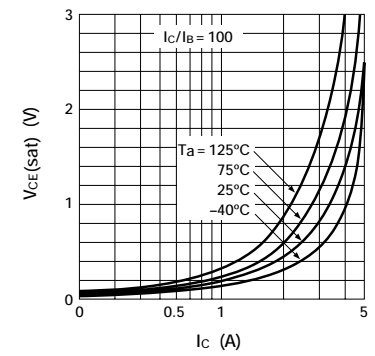
■ I<sub>c</sub> — V<sub>CE</sub> Characteristics (typ.)



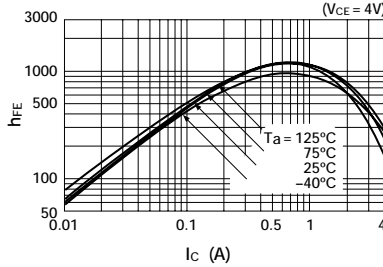
■ V<sub>CE</sub> (sat) — I<sub>B</sub> Temperature Characteristics (I<sub>c</sub> = 0.5A)



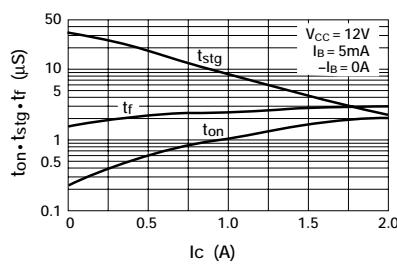
■ V<sub>CE</sub> (sat) — I<sub>c</sub> Temperature Characteristics



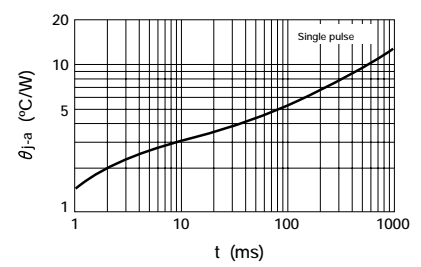
■ h<sub>FE</sub> — I<sub>c</sub> Temperature Characteristics (V<sub>CE</sub> = 4V)



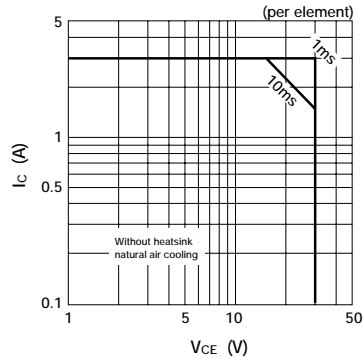
■ t<sub>on</sub> · t<sub>stg</sub> · t<sub>f</sub> — I<sub>c</sub> Characteristics (typ.)



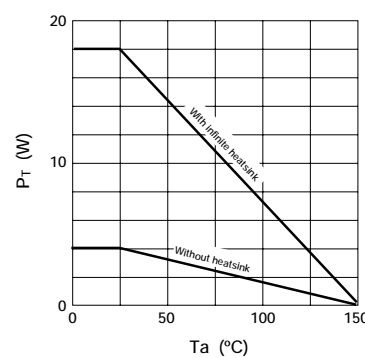
■ θ<sub>J-a</sub> — t Characteristics



■ Safe Operating Area (single pulse)



■ P<sub>T</sub> — T<sub>a</sub> Derating



## Equivalent Circuit Diagram

