

MOS FET Array STA509A

Absolute Maximum Ratings (Ta=25°C)

| Symbol | Ratings | Unit |
|--------------------------------------|----------------|------|
| V _{DSS} | 52±5 | V |
| V _{GSS} | ±20 | V |
| I _D | ±3 | A |
| I _D (pulse) ^{*1} | ±6 | A |
| P _T | 4 (Ta = 25°C) | W |
| | 20 (Tc = 25°C) | W |
| E _{AS} ^{*2} | 40 | mJ |
| T _{ch} | 150 | °C |
| T _{stg} | -55 to +150 | °C |

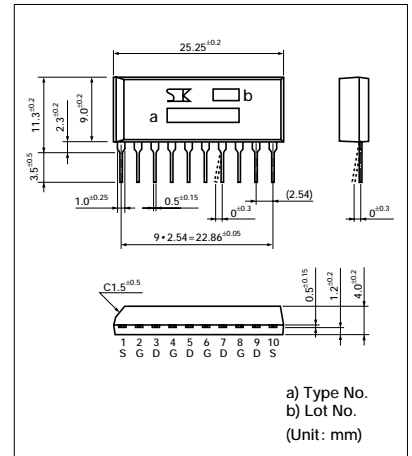
*1 P_W ≤ 100μs, duty ≤ 1%

*2 V_{DD} = 12V, L = 10mH, unclamped, R_G = 10Ω

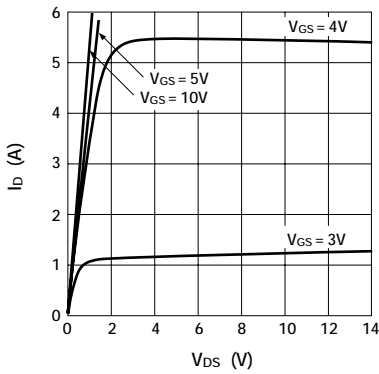
Electrical Characteristics (Ta=25°C)

| Symbol | Test Conditions | Ratings | | | Unit |
|-----------------------|---|---------|------|------|------|
| | | min | typ | max | |
| V _{(BR) DSS} | I _D = 1mA, V _{GS} = 0V | 47 | 52 | 57 | V |
| I _{GSS} | V _{GS} = ±20V | | | ±1.0 | μA |
| I _{DSS} | V _{DS} = 40V, V _{GS} = 0V | | | 100 | μA |
| V _{TH} | V _{DS} = 10V, I _D = 250μA | 1.0 | | 2.5 | V |
| Re (yfs) | V _{DS} = 10V, I _D = 1.0A | 1.0 | | | S |
| R _{DS (ON)} | V _{GS} = 10V, I _D = 1.0A | | 0.2 | 0.25 | Ω |
| | V _{GS} = 4V, I _D = 1.0A | | 0.25 | 0.3 | Ω |
| C _{iss} | V _{DS} = 10V | | 200 | | pF |
| C _{oss} | f = 1.0MHz | | 120 | | pF |
| C _{rss} | V _{GS} = 0V | | 20 | | pF |
| t _{d (on)} | I _D = 1A V _{DD} = 12V | | 2.0 | | μs |
| t _r | R _L = 12Ω | | 7.4 | | μs |
| t _{d (off)} | V _{GS} = 5V | | 3.3 | | μs |
| t _f | R _{G1} = 50Ω, R _{G2} = 10Ω | | 4.2 | | μs |
| V _{SD} | I _{SD} = 6A, V _{GS} = 0V | 1.0 | 1.5 | | V |

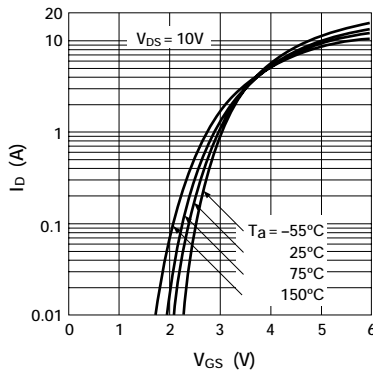
External Dimensions STA



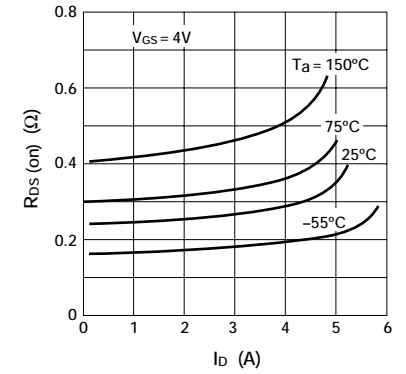
I_D—V_{DS} Characteristics



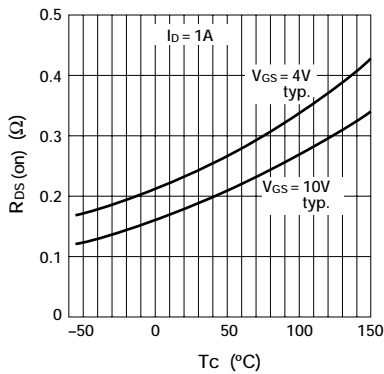
I_D—V_{GS} Characteristics



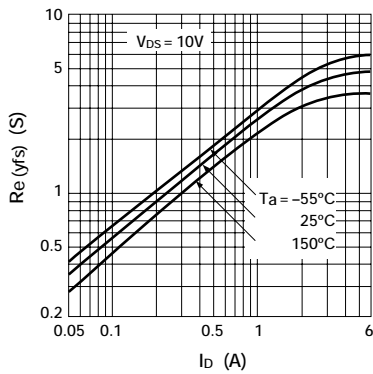
R_{DS (on)}—I_D Characteristics



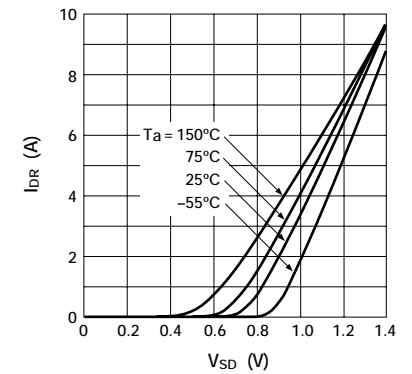
R_{DS (on)}—T_c Characteristics



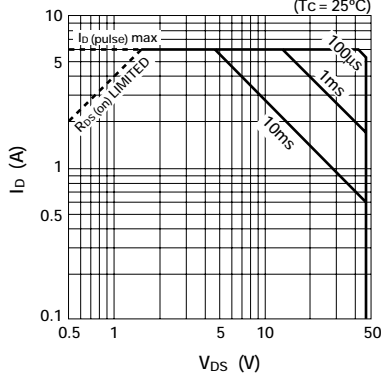
Re (yfs)—I_D Characteristics



I_{DR}—V_{SD} Characteristics



Safe Operating Area (single pulse)



Equivalent Circuit Diagram

