MOS FET Array STA509A

Absolute Maximum Ratings (Ta=25ºC)

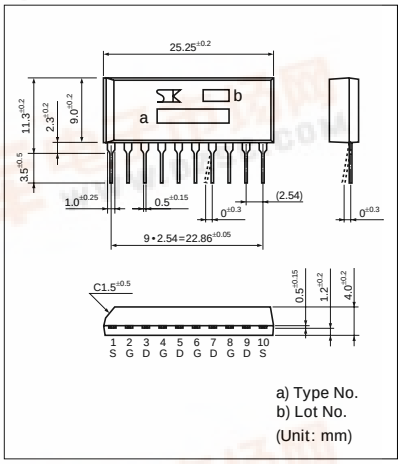
Symbol	Ratings	Unit
V_{DSS}	52±5	V
V_{GSS}	±20	V
I_D	±3	A
$I_{D\ (pulse)}$ *1	±6	A
P_T	4 (Ta=25ºC)	W
	20 (Tc=25ºC)	W
E_{AS} *2	40	mJ
Tch	150	ºC
Tstg	−55 to +150	ºC

*1 $P_W \leqq 100\mu s$, duty ≦1%
*2 $V_{DD}=12V$, L=10mH, unclamped, $R_G=10\Omega$

Electrical Characteristics (Ta=25ºC)

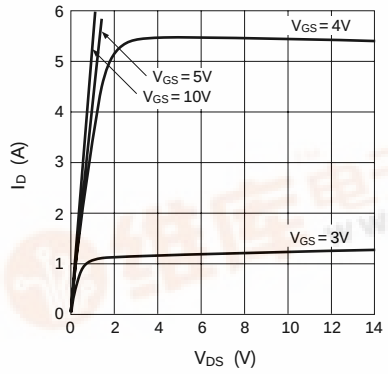
Symbol	Test Conditions	Ratings min	Ratings typ	Ratings max	Unit
$V_{(BR)\ DSS}$	I_D=1mA, V_{GS}=0V	47	52	57	V
I_{GSS}	V_{GS}=±20V			±1.0	µA
I_{DSS}	V_{DS}=40V, V_{GS}=0V			100	µA
V_{TH}	V_{DS}=10V, I_D=250µA	1.0		2.5	V
$R_{e\ (yfs)}$	V_{DS}=10V, I_D=1.0A	1.0			S
$R_{DS\ (ON)}$	V_{GS}=10V, I_D=1.0A		0.2	0.25	Ω
	V_{GS}=4V, I_D=1.0A		0.25	0.3	Ω
Ciss	V_{DS}=10V		200		pF
Coss	f=1.0MHz		120		pF
Crss	V_{GS}=0V		20		pF
$t_{d\ (on)}$	I_D=1A		2.0		µs
tr	V_{DD}≒12V		7.4		µs
$t_{d\ (off)}$	R_L=12Ω		3.3		µs
tf	V_{GS}=5V, 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

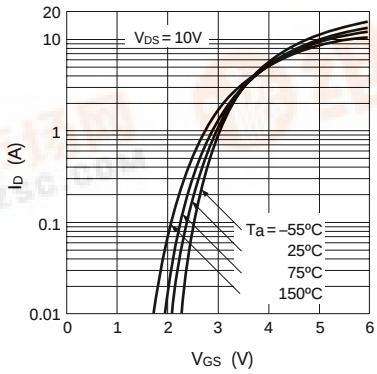


a) Type No.
b) Lot No.
(Unit: mm)

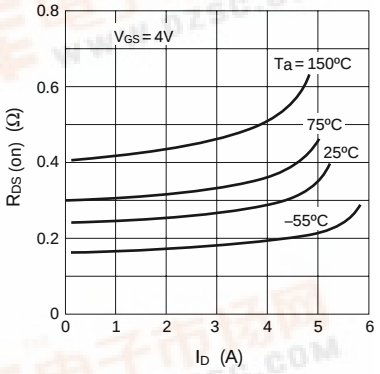
■ I_D — V_{DS} Characteristics



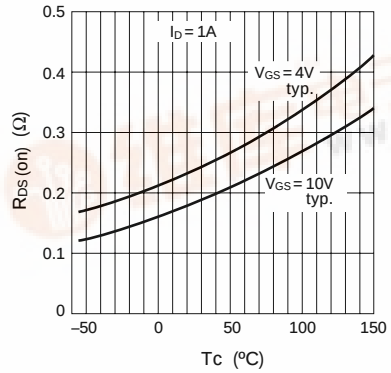
■ I_D — V_{GS} Characteristics



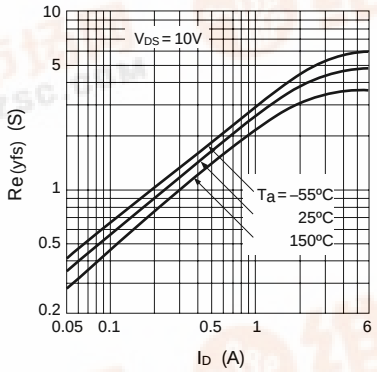
■ R_{DS} (on) — I_D Characteristics



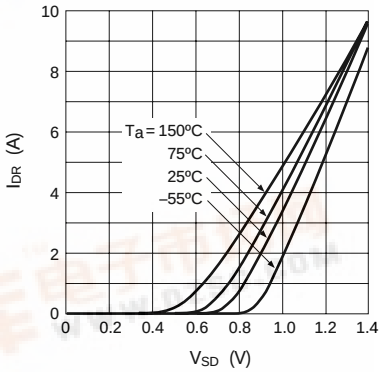
■ R_{DS} (on) — T_C Characteristics



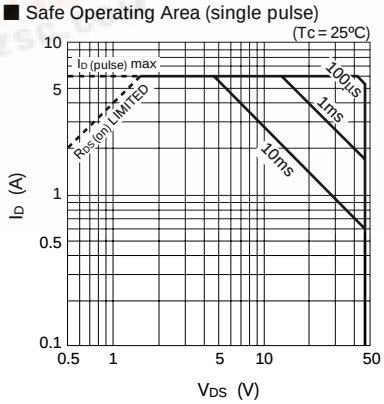
■ R_e (yfs) — I_D Characteristics



■ I_{DR} — V_{SD} Characteristics



■ Safe Operating Area (single pulse)



Equivalent Circuit Diagram