

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

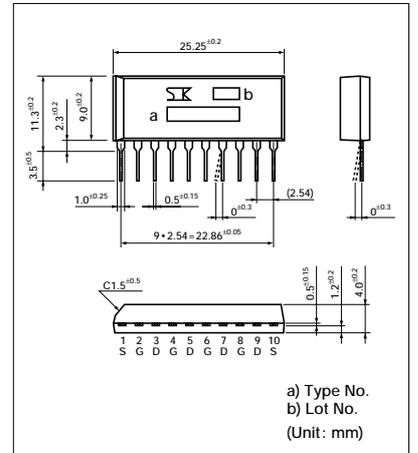
*1 P_W ≤ 100μs, duty ≤ 1%

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

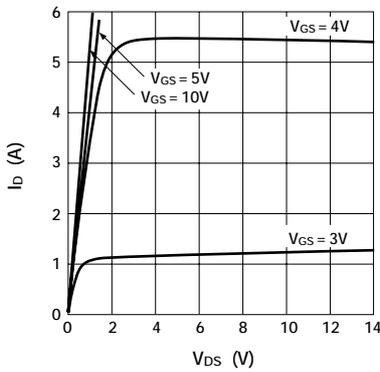
Electrical Characteristics (Ta=25°C)

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

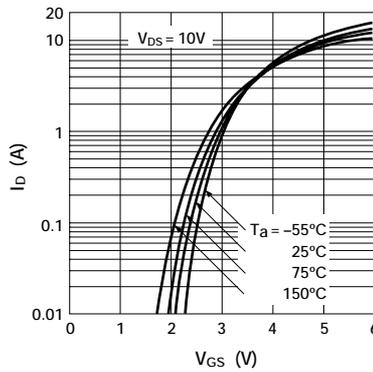
External Dimensions STA



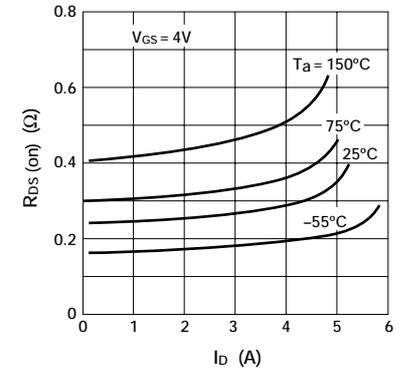
I_D—V_{DS} Characteristics



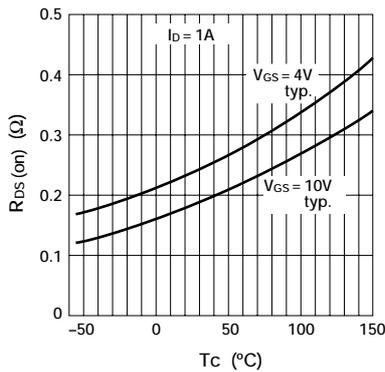
I_D—V_{GS} Characteristics



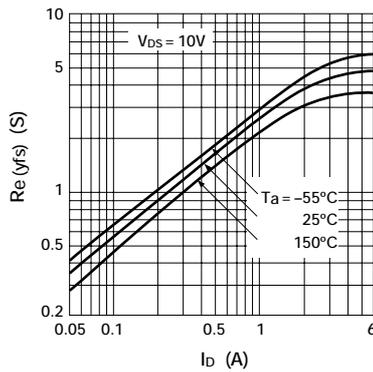
R_{DS (on)}—I_D Characteristics



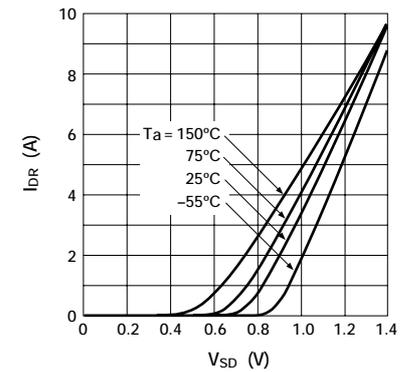
R_{DS (on)}—T_c Characteristics



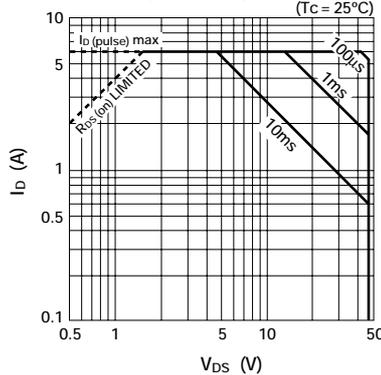
Re (yfs)—I_D Characteristics



I_{DR}—V_{SD} Characteristics



Safe Operating Area (single pulse) (T_c = 25°C)



Equivalent Circuit Diagram

