

# MOS FET Array SMA5113

## Absolute Maximum Ratings (Ta=25°C)

Symbol	Ratings	Unit
V <sub>DSS</sub>	450	V
V <sub>GSS</sub>	±30	V
I <sub>D</sub>	±7	A
I <sub>D</sub> (pulse)*1	±28	A
P <sub>T</sub>	4 (Ta=25°C, All circuits operate, No Fin)	W
	35 (Tc=25°C, All circuits operate, ∞ Fin)	W
E <sub>AS</sub> *2	130	mJ
I <sub>AS</sub>	7	A
θ <sub>J-a</sub>	31.2 (Junction - Ambient, Ta=25°C, All circuits operate)	°C/W
θ <sub>J-c</sub>	3.57 (Junction - Case, Ta=25°C, All circuits operate)	°C/W
T <sub>ch</sub>	150	°C
T <sub>stg</sub>	-55 to +150	°C

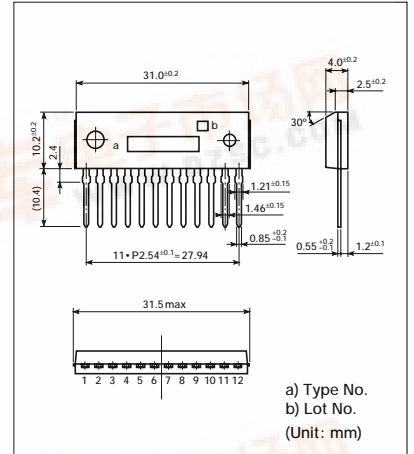
\*1 P<sub>W</sub> ≤ 100μs, duty ≤ 1%

\*2 V<sub>DD</sub> = 30V, L = 5mH, I<sub>L</sub> = 7A, unclamped, R<sub>e</sub> = 50Ω

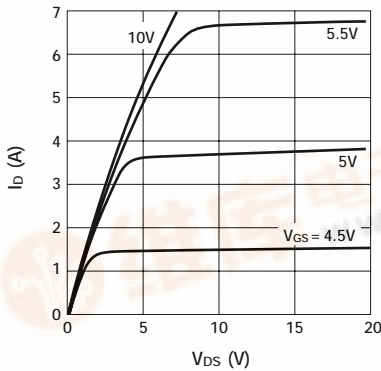
## Electrical Characteristics (Ta=25°C)

Symbol	Test Conditions	Ratings			Unit
		min	typ	max	
V <sub>(BR) DSS</sub>	I <sub>D</sub> = 100μA, V <sub>GS</sub> = 0V	450			V
I <sub>GSS</sub>	V <sub>GS</sub> = ±30V			±100	nA
I <sub>DSS</sub>	V <sub>DS</sub> = 450V, V <sub>GS</sub> = 0V			100	μA
V <sub>TH</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 1mA	2.0		4.0	V
R <sub>e</sub> (yfs)	V <sub>DS</sub> = 20V, I <sub>D</sub> = 3.5A	3.5	5.0		S
R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 3.5A		0.84	1.1	Ω
C <sub>iss</sub>	V <sub>DS</sub> = 10V, f = 1.0MHz		720		pF
C <sub>oss</sub>	V <sub>GS</sub> = 0V, f = 1.0MHz		150		pF
C <sub>rss</sub>	V <sub>GS</sub> = 0V, f = 1.0MHz		65		pF
t <sub>d(on)</sub>	I <sub>D</sub> = 3.5A, V <sub>DD</sub> = 200V, R <sub>L</sub> = 57Ω		25		ns
t <sub>r</sub>	V <sub>GS</sub> = 10V, R <sub>G</sub> = 50Ω		40		ns
t <sub>d(off)</sub>	V <sub>GS</sub> = 10V, R <sub>G</sub> = 50Ω		70		ns
t <sub>f</sub>	V <sub>GS</sub> = 10V, R <sub>G</sub> = 50Ω		50		ns
V <sub>SD</sub>	I <sub>SD</sub> = 7A, V <sub>GS</sub> = 0V		1.0	1.5	V

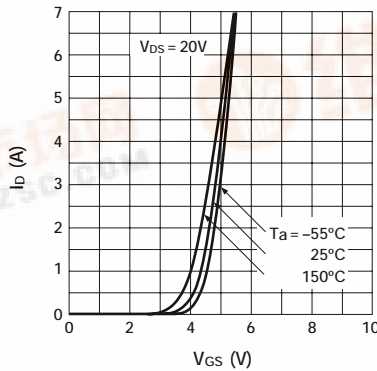
## External Dimensions SMA (LF1000)



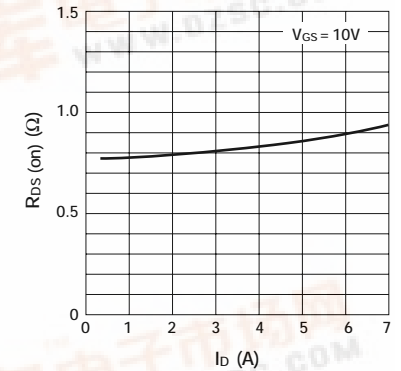
■ I<sub>D</sub> - V<sub>DS</sub> Characteristics



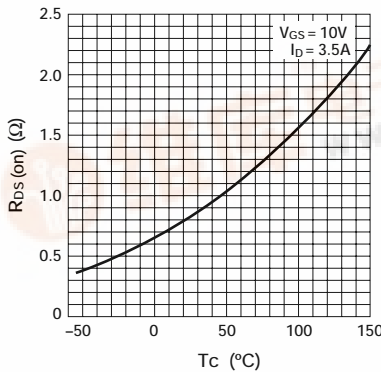
■ I<sub>D</sub> - V<sub>GS</sub> Characteristics



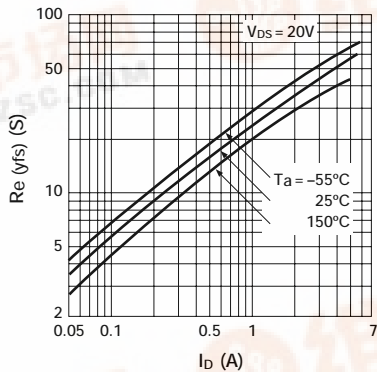
■ R<sub>DS(on)</sub> - I<sub>D</sub> Characteristics



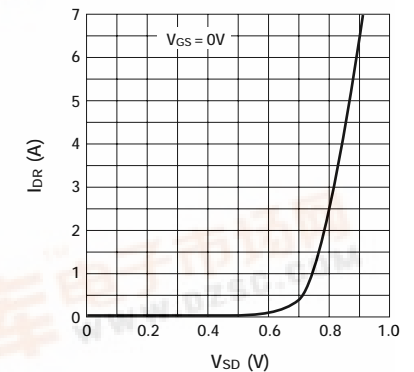
■ R<sub>DS(on)</sub> - T<sub>C</sub> Characteristics



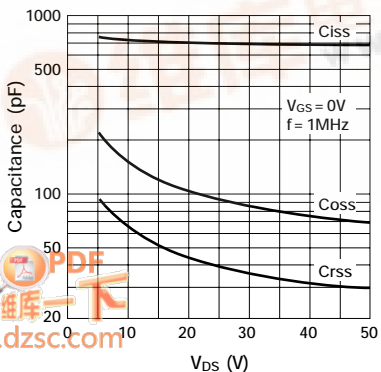
■ R<sub>e</sub> (yfs) - I<sub>D</sub> Characteristics



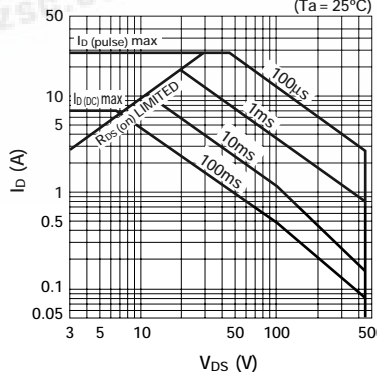
■ I<sub>DR</sub> - V<sub>SD</sub> Characteristics



■ Capacitance - V<sub>DS</sub> Characteristics



■ Safe Operating Area (single pulse) (Ta = 25°C)



## Equivalent Circuit Diagram

