Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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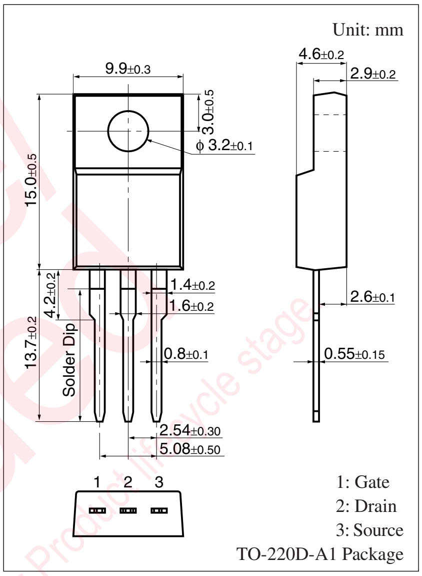
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

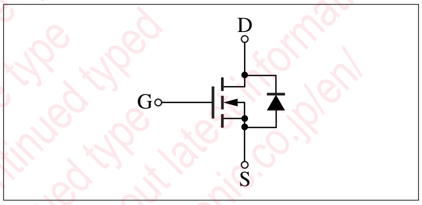
2SK3048

Silicon N-channel power MOSFET



Marking Symbol: K3048

Internal Connection



■ Features

- Avalanche energy capability guaranteed
- High-speed switching
- Low on-resistance
- No secondary breakdown

■ Applications

- Non-contact relay
- Solenoid drive
- Motor drive
- Control equipment
- Switching mode regulator

■ Absolute Maximum Ratings $T_C = 25°C$

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	600	V
Gate-source surrender voltage	V_{GSS}	±30	V
Drain current	I_D	±3	A
Peak drain current	I_{DP}	±6	A
Avalanche energy capability *	EAS	22.5	mJ
Power dissipation	P_D	35	W
$T_a = 25°C$		2	
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

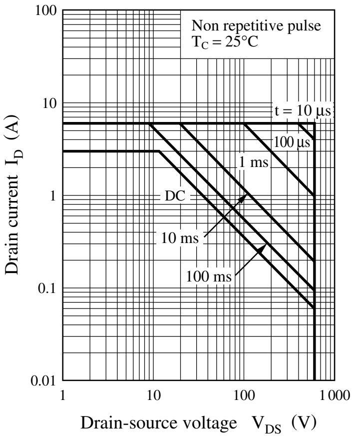
Note) *: L = 5 mH, I_L = 3 A, 1 pulse

■ Electrical Characteristics $T_C = 25°C \pm 3°C$

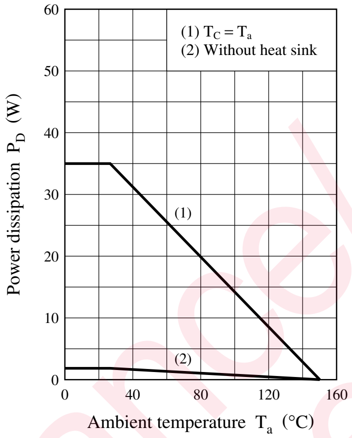
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	I_D = 1 mA, V_{GS} = 0	600			V
Drain-source cutoff current	I_{DSS}	V_{DS} = 480 V, V_{GS} = 0			100	μA
Gate-source cutoff current	I_{GSS}	V_{GS} = ±30 V, V_{DS} = 0			±1	μA
Gate threshold voltage	V_{th}	V_{DS} = 25 V, I_D = 1 mA	2.0		5.0	V
Forward transfer admittance	$\lvert Y_{fs} \rvert$	V_{DS} = 25 V, I_D = 2 A	1.5	2.5		S
Drain-source ON resistance	$R_{DS(on)}$	V_{GS} = 10 V, I_D = 2 A		1.7	2.5	Ω
Diode forward voltage	V_{DF}	I_{DR} = 3 A, V_{GS} = 0			−1.5	V
Short-circuit forward transfer capacitance (Common source)	C_{iss}	V_{DS} = 20 V, V_{GS} = 0, f = 1 MHz		750		pF
Short-circuit output capacitance (Common source)	C_{oss}			80		pF
Reverse transfer capacitance (Common source)	C_{rss}			25		pF
Turn-on delay time	$t_{d(on)}$	V_{DD} = 200 V, I_D = 2 A, R_L = 100 Ω		15		ns
Rise time	t_r	V_{GS} = 10 V		25		ns
Fall time	t_f			40		ns
Turn-off delay time	$t_{d(off)}$			90		ns
Thermal resistance (ch-c)	$R_{th(ch-c)}$				3.5	°C/W
Thermal resistance (ch-a)	$R_{th(ch-a)}$				62.5	°C/W

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

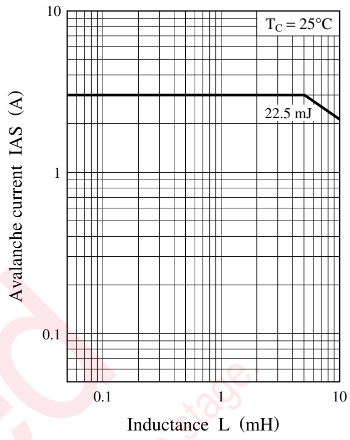
Safe operation area



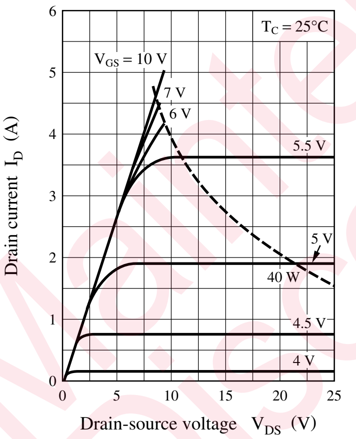
P_D — T_a



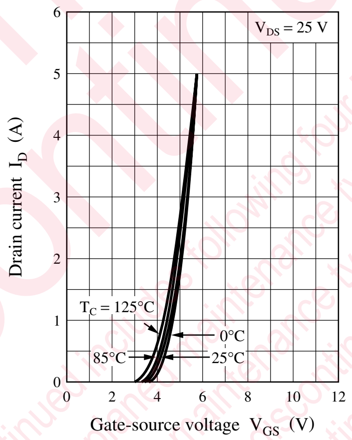
IAS — L



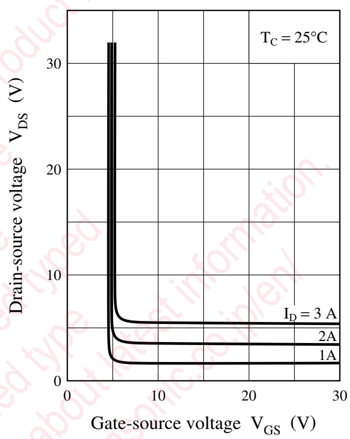
I_D — V_{DS}



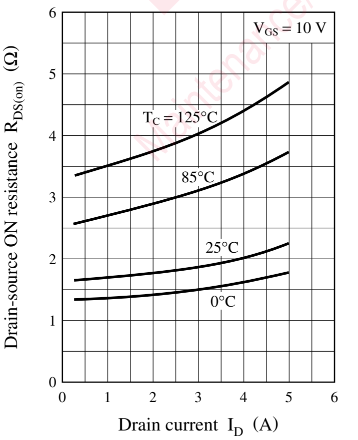
I_D — V_{GS}



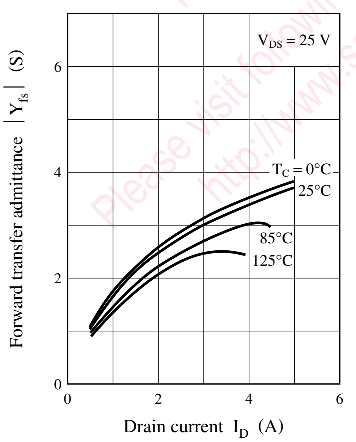
V_{DS} — V_{GS}



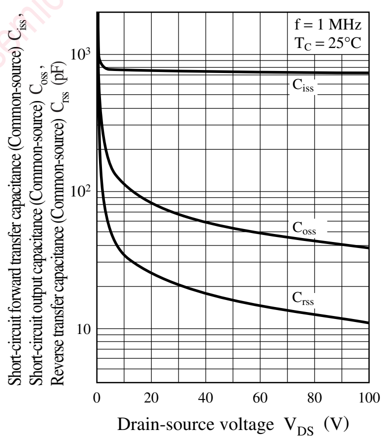
$R_{DS(on)}$ — I_D



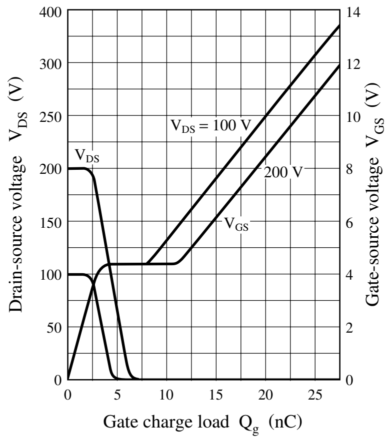
$|Y_{fs}|$ — I_D



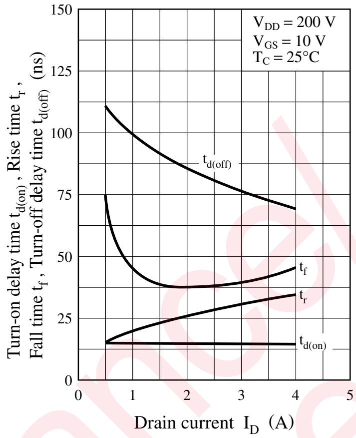
C_{iss} , C_{oss} , C_{rss} — V_{DS}



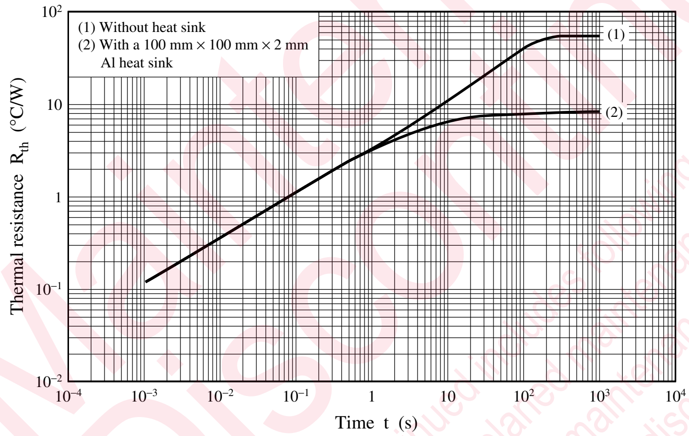
V_{DS} , V_{GS} — Q_g



$t_{d(on)}$, t_r , t_f , $t_{d(off)}$ — I_D



R_{th} — t



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(6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.