

2SK2340

Silicon N-Channel Power F-MOS FET

■ Features

- Avalanche energy capacity guaranteed
- High-speed switching
- Low ON-resistance
- No secondary breakdown

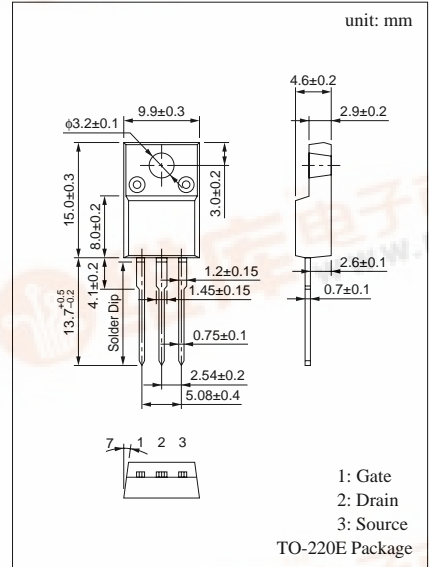
■ Applications

- Contactless relay
- Driving circuit for a solenoid
- Driving circuit for a motor
- Control equipment
- Switching power supply

■ Absolute Maximum Ratings (T_C = 25°C)

Parameter	Symbol	Ratings	Unit
Drain to Source breakdown voltage	V _{DSS}	900	V
Gate to Source voltage	V _{GSS}	±30	V
Drain current	DC	I _D	±5 A
	Pulse	I _{DP}	±10 A
Avalanche energy capacity	EAS*	45	mJ
Allowable power dissipation	T _C = 25°C	P _D	50 W
	T _a = 25°C		2 W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

* L = 3.6mH, I_L = 5A, 1 pulse

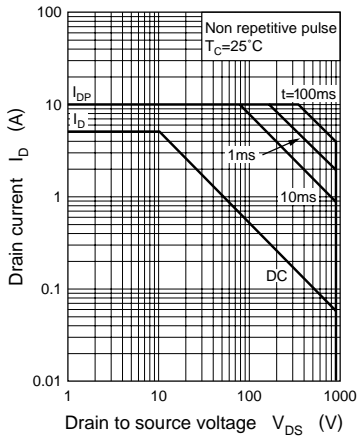


■ Electrical Characteristics (T_C = 25°C)

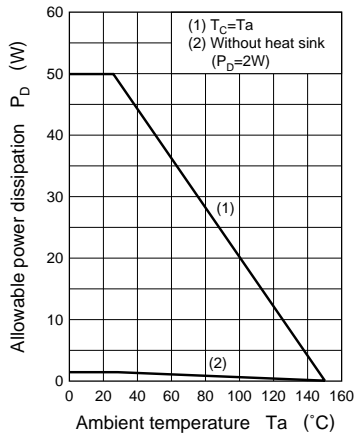
Parameter	Symbol	Conditions	min	typ	max	Unit	
Drain to Source cut-off current	I _{DSS}	V _{DS} = 720V, V _{GS} = 0			100	μA	
Gate to Source leakage current	I _{GSS}	V _{GS} = ±30V, V _{DS} = 0			±1	μA	
Drain to Source breakdown voltage	V _{DSS}	I _D = 1mA, V _{GS} = 0	900			V	
Gate threshold voltage	V _{th}	V _{DS} = 25V, I _D = 1mA	2		5	V	
Drain to Source ON-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 3A		2	2.8	Ω	
Forward transfer admittance	Y _{fs}	V _{DS} = 25V, I _D = 3A	1.5	3.5		S	
Diode forward voltage	V _{DSF}	I _{DR} = 5A, V _{GS} = 0			-1.6	V	
Input capacitance (Common Source)	C _{iss}	V _{DS} = 20V, V _{GS} = 0, f = 1MHz		1400		pF	
Output capacitance (Common Source)	C _{oss}				140		pF
Reverse transfer capacitance (Common Source)	C _{rss}				60		pF
Turn-on time (delay time)	t _{d(on)}	V _{DD} = 200V, I _D = 3A		30		ns	
Rise time	t _r				60		ns
Fall time	t _f		V _{GS} = 10V, R _L = 66.6Ω		60		ns
Turn-off time (delay time)	t _{d(off)}				170		ns
Thermal resistance between channel and case	R _{th(ch-c)}				2.5	°C/W	
Thermal resistance between channel and atmosphere	R _{th(ch-a)}				62.5	°C/W	



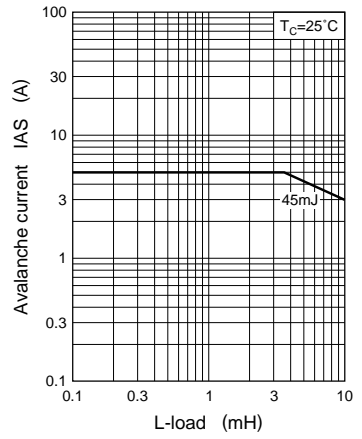
Area of safe operation (ASO)



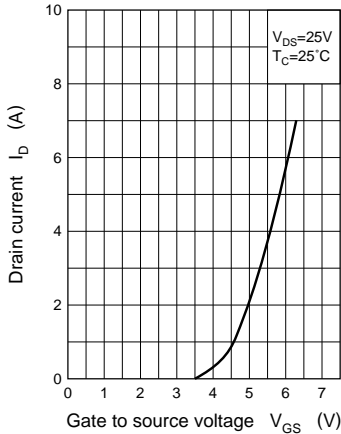
$P_D - T_a$



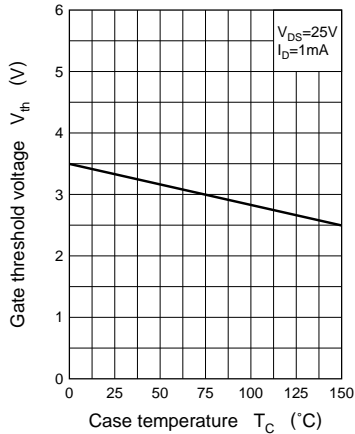
IAS — L-load



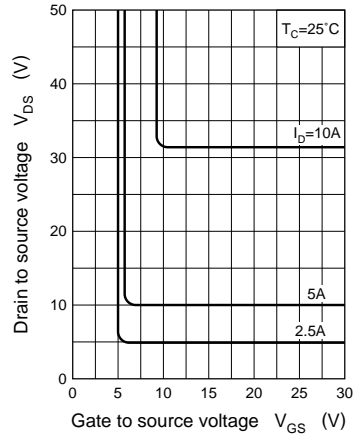
$I_D - V_{GS}$



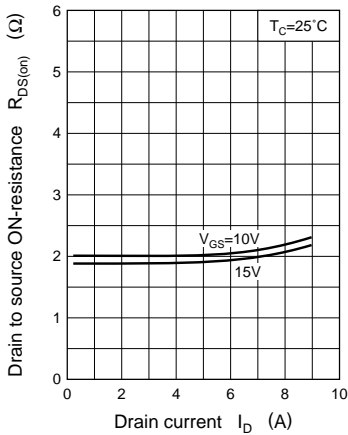
$V_{th} - T_C$



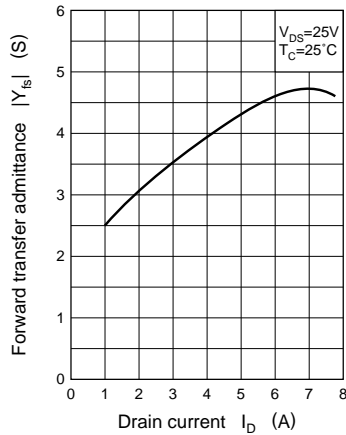
$V_{DS} - V_{GS}$



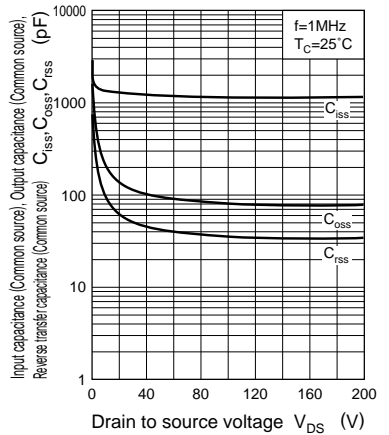
$R_{DS(on)} - I_D$



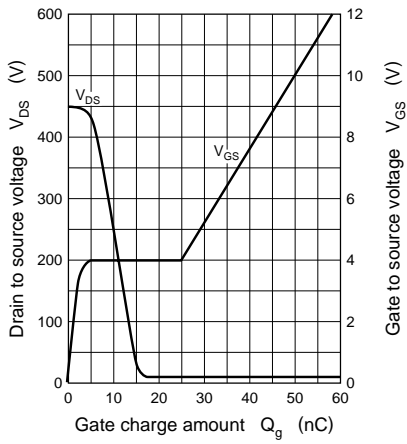
$|Y_{fs}| - I_D$



$C_{iss}, C_{oss}, C_{rss} - V_{DS}$



$V_{DS}, V_{GS} - Q_g$



$R_{th(t)} - t$

