2SK2340

Silicon N-Channel Power F-MOS

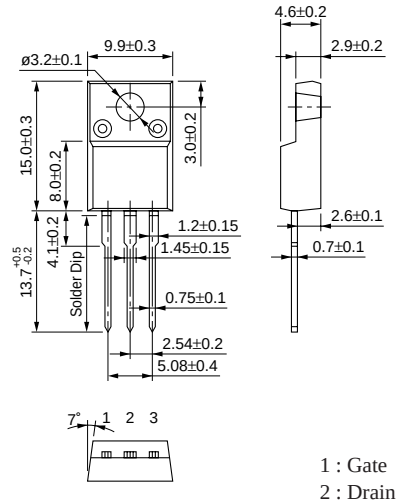
■ Features

- 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

Unit : mm



1 : Gate
2 : Drain
3 : Source
TO-220E Package

■ Absolute Maximum Ratings (Tc = 25˚C)

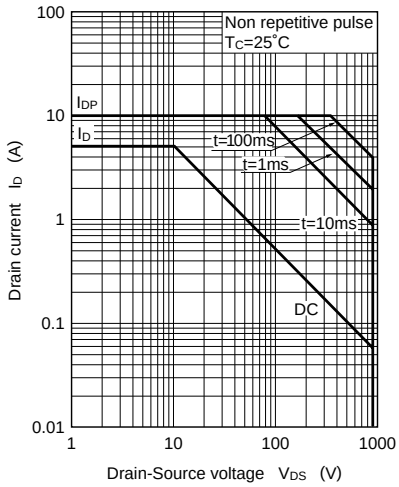
Parameter		Symbol	Rating	Unit
Drain-Source breakdown voltage		V_{DSS}	900	V
Gate-Source voltage		V_{GSS}	±30	V
Drain current	DC	I_D	±5	A
	Pulse	I_{DP}	±10	A
Avalanche energy capability		EAS *	45	mJ
Allowable power dissipation	T_C= 25˚C	P_D	50	W
	Ta= 25˚C		2	
Channel temperature		T_{ch}	150	˚C
Storage temperature		T_{stg}	–55 to +150	˚C

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

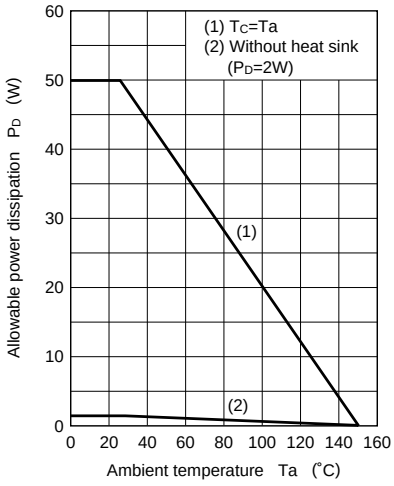
■ Electrical Characteristics (Tc = 25˚C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source cut-off current	I_{DSS}	V_{DS}= 720V, V_{GS}= 0			100	μ A
Gate-Source leakage current	I_{GSS}	V_{GS}=± 30V, V_{DS}= 0			±1	μ A
Drain-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-Source ON-resistance	$R_{DS(on)}$	V_{GS}=10V, I_D= 3A		2	2.8	Ω
Forward transadmittance	$\|Y_{fs}\|$	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	C_{iss}	V_{DS}= 20V, V_{GS}= 0, f=1MHz		1400		pF
Output capacitance	C_{oss}			140		pF
Feedback capacitance	C_{rss}			60		pF
Turn-on time (delay time)	$t_{d(on)}$	V_D≒200V, I_D= 3A, V_{GS}=10V, R_L= 66.6Ω		30		ns
Rise time	t_r			60		ns
Fall time	t_f			60		ns
Turn-off time (delay time)	$t_{d(off)}$			170		ns
Channel-Case heat resistance	$R_{th(ch-c)}$				2.5	˚C/W
Channel-Atmosphere heat resistance	$R_{th(ch-a)}$				62.5	˚C/W

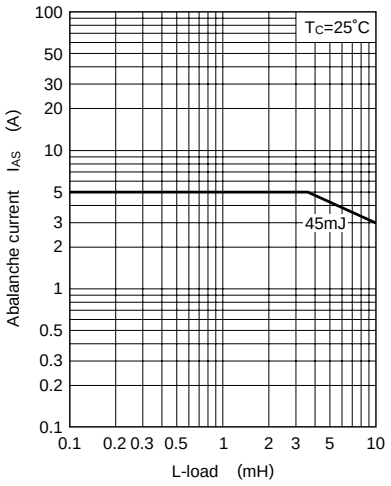
Area of safe operation (ASO)



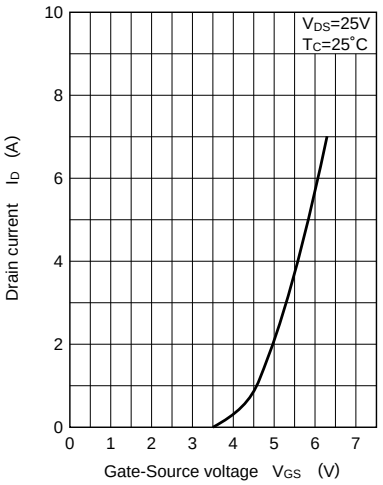
P_D – Ta



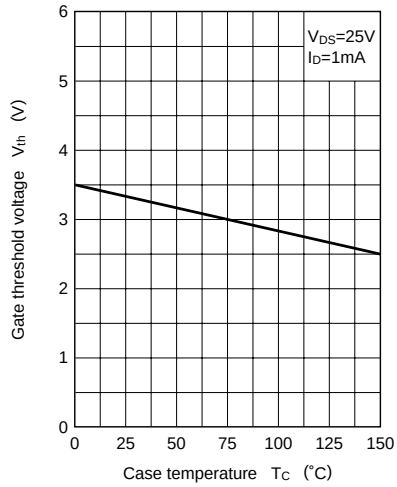
IAS – L-load



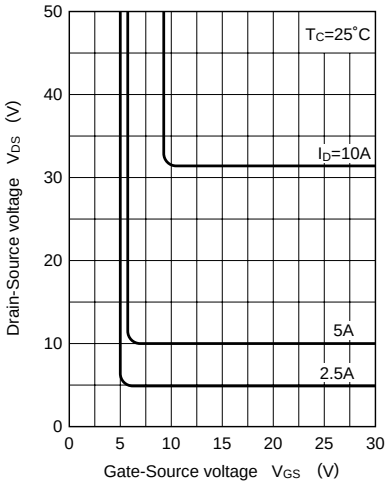
I_D – V_{GS}



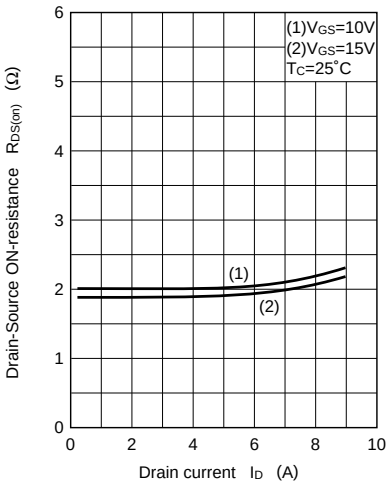
V_{th} – T_C



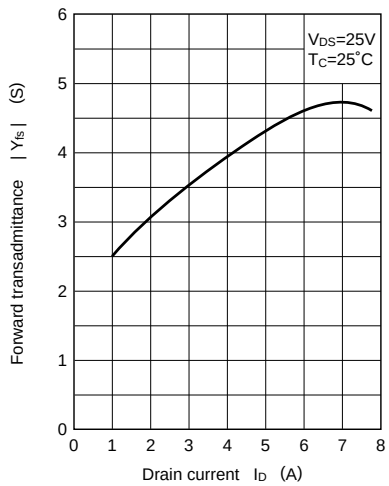
V_{DS} – V_{GS}



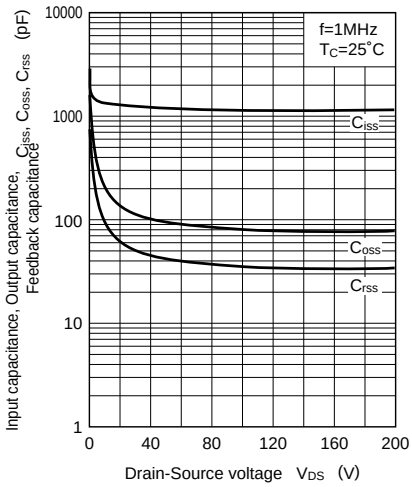
$R_{DS(on)}$ – I_D



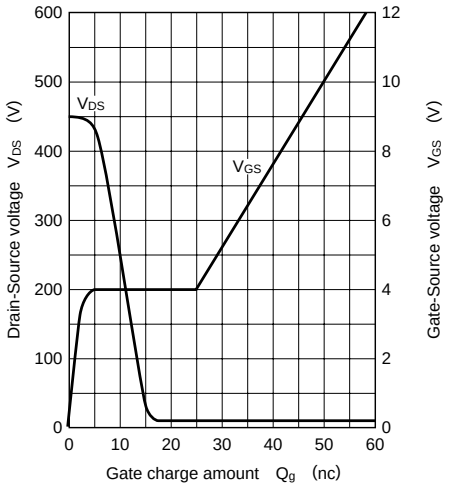
$|Y_{fs}|$ – I_D



C_{iss}, C_{oss}, C_{rss} – V_{DS}



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



$R_{th} - t_P$