

2SK2375

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

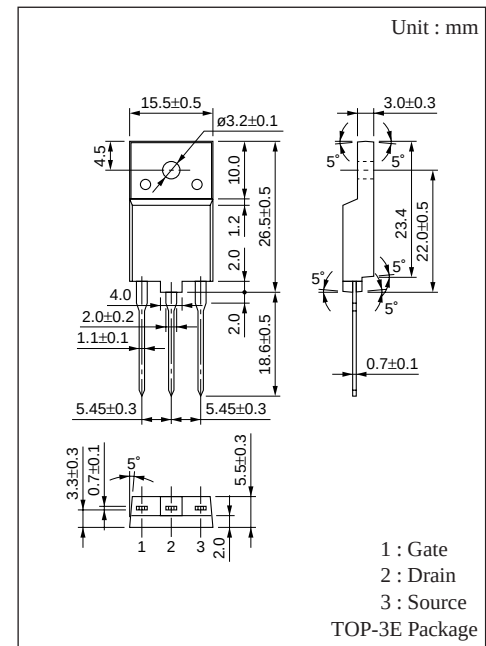
■ Absolute Maximum Ratings (T_c = 25°C)

Parameter		Symbol	Rating	Unit
Drain-Source breakdown voltage		V _{DSS}	900	V
Gate-Source voltage		V _{GSS}	±30	V
Drain current	DC	I _D	±8	A
	Pulse	I _{DP}	±16	A
Avalanche energy capability		EAS *	60	mJ
Allowable power dissipation	T _C = 25°C	P _D	100	W
	Ta= 25°C		3	
Channel temperature		T _{ch}	150	°C
Storage temperature		T _{stg}	−55 to +150	°C

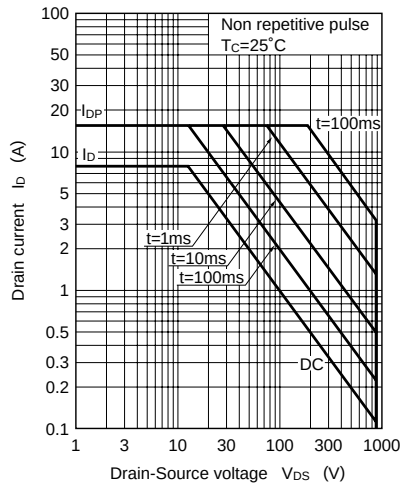
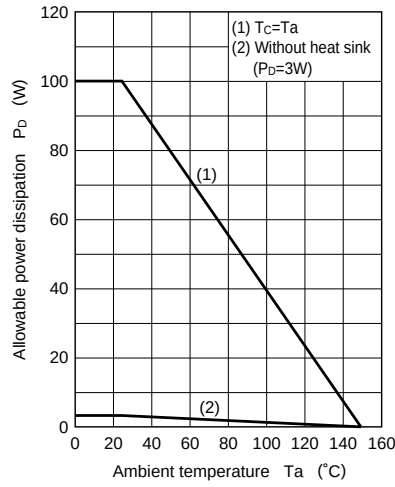
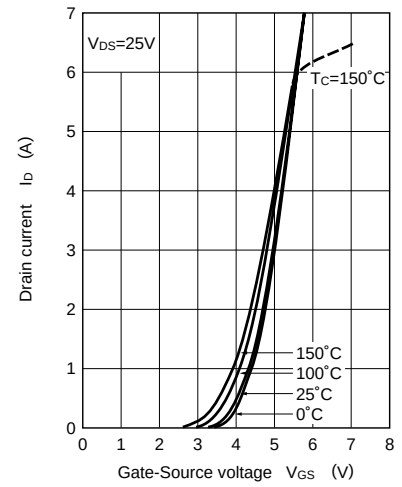
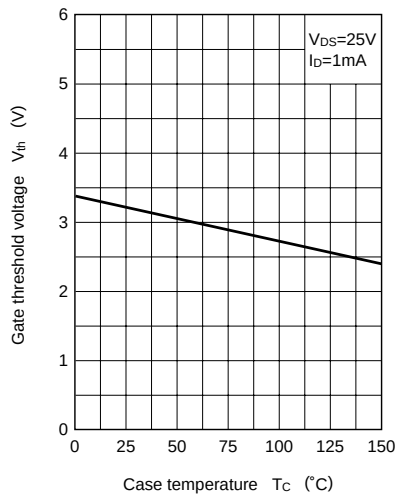
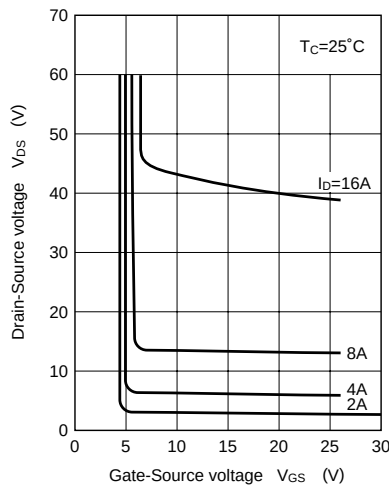
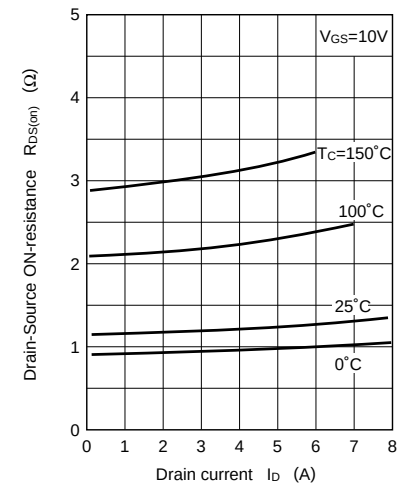
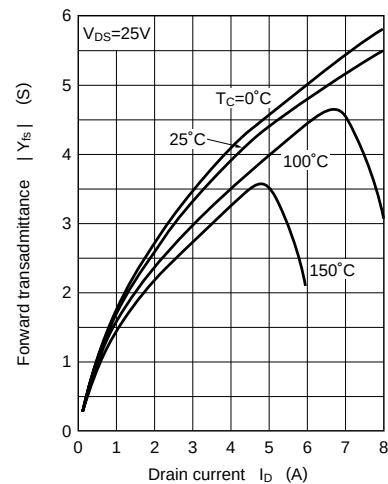
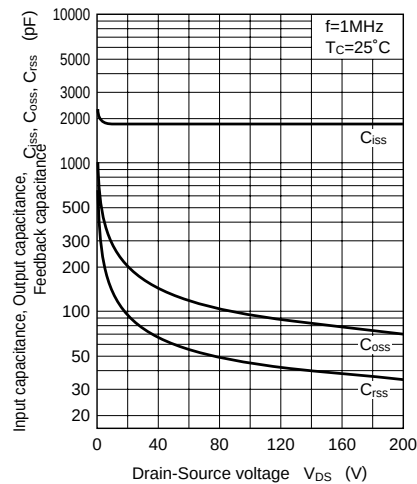
* L = 1.9mH, I_L = 8A, 1 pulse

■ Electrical Characteristics (T_c = 25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source cut-off current	I _{DSS}	V _{DS} = 720V, V _{GS} = 0			100	μA
Gate-Source leakage current	I _{GSS}	V _{GS} = ±30V, V _{DS} = 0			±1	μA
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 = 4A		1.3	1.7	Ω
Forward transadmittance	Y _{fs}	V _{DS} = 25V, I _D = 4A	3	5.5		S
Diode forward voltage	V _{DSF}	I _{DR} = 8A, V _{GS} = 0			−1.6	V
Input capacitance	C _{iss}	V _{DS} = 20V, V _{GS} = 0, f = 1MHz		1800		pF
Output capacitance	C _{oss}			200		pF
Feedback capacitance	C _{rss}			90		pF
Turn-on time (delay time)	t _{d(on)}	V _{DD} = 200V, I _D = 4A V _{GS} = 10V, R _L = 50Ω		30		ns
Rise time	t _r			70		ns
Fall time	t _f			80		ns
Turn-off time (delay time)	t _{d(off)}			250		ns
Channel-Case heat resistance	R _{th(ch-c)}				1.25	°C/W
Channel-Atmosphere heat resistance	R _{th(ch-a)}				41.67	°C/W



Area of safe operation (ASO)

 $P_D - T_a$  $I_D - V_{GS}$  $V_{th} - T_C$  $V_{DS} - V_{GS}$  $R_{DS(on)} - I_D$  $|Y_{fs}| - I_D$  $C - V_{DS}$  $t - I_D$ 