

2SK2576(Tentative)

Silicon N-Channel Power F-MOS

■ Features

- Avalanche energy capability guaranteed
- High-speed switching
- Low ON-resistance
- No secondary breakdown
- Low-voltage drive

■ Applications

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

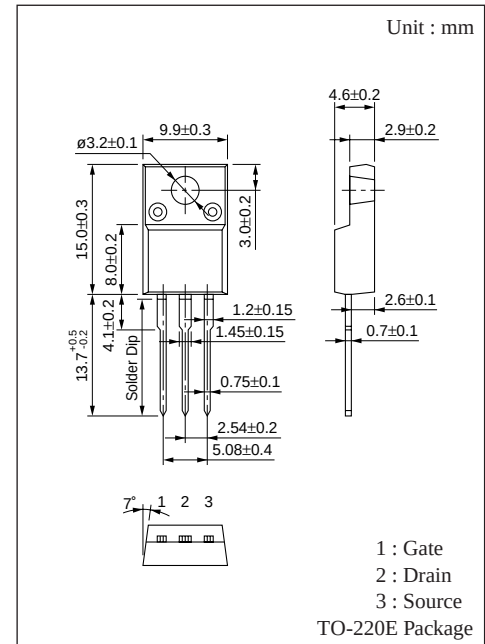
■ Absolute Maximum Ratings (T_c = 25°C)

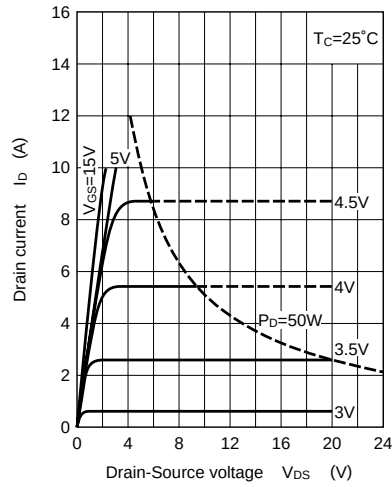
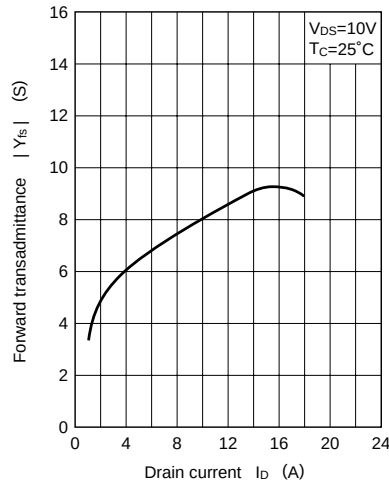
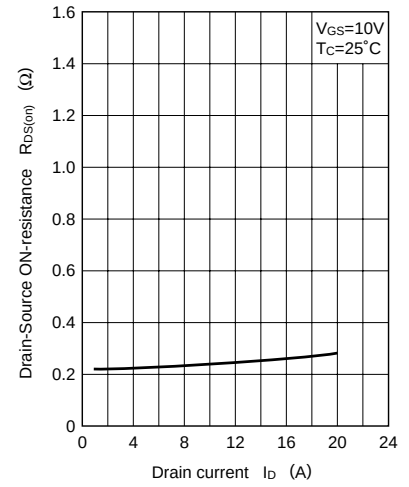
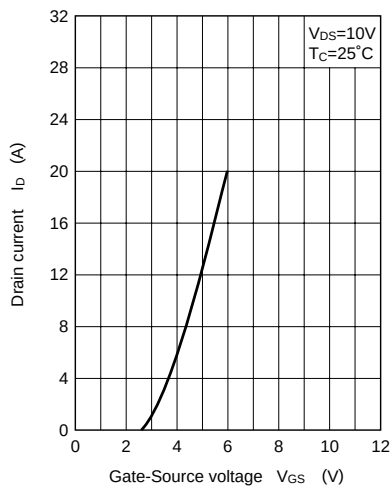
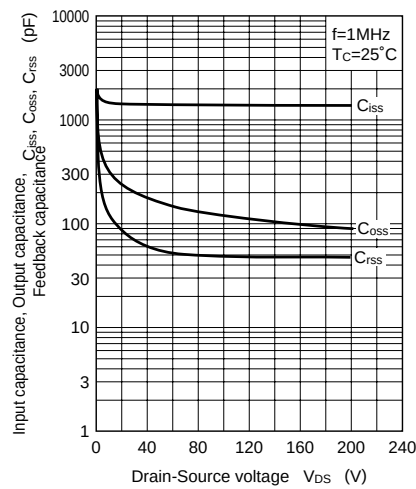
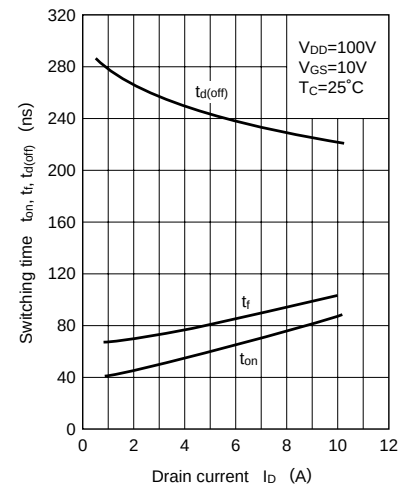
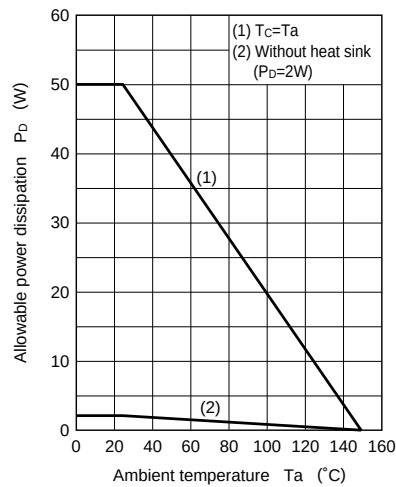
Parameter	Symbol	Rating	Unit
Drain-Source breakdown voltage	V _{DSS}	250	V
Gate-Source voltage	V _{GSS}	±20	V
Drain current	DC	I _D	±10
	Pulse	I _{DP}	±20
Avalanche energy capability	EAS *	5	mJ
Allowable power dissipation	T _C = 25°C	P _D	50
	T _a = 25°C		2
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	−55 to +150	°C

* L = 0.1mH, I_L=10A, 1 pulse

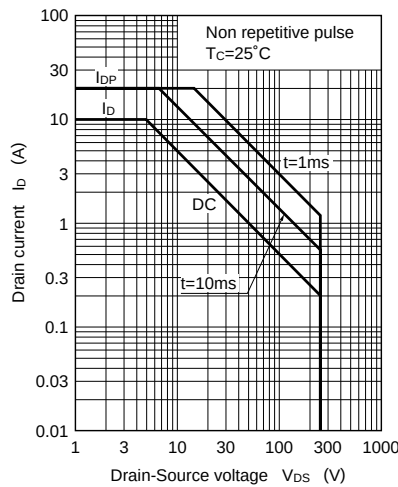
■ Electrical Characteristics (T_c = 25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source cut-off current	I _{DSS}	V _{DS} = 200V, V _{GS} = 0			100	μA
Gate-Source leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0			±1	μA
Drain-Source breakdown voltage	V _{DSS}	I _D =1mA, V _{GS} = 0	250			V
Gate threshold voltage	V _{th}	V _{DS} =10V, I _D =1mA	1		5	V
Drain-Source ON-resistance	R _{DS}	V _{GS} =10V, I _D = 5A		0.23	0.3	Ω
Forward transadmittance	Y _{fs}	V _{DS} =10V, I _D = 5A	4	6.5		S
Diode forward voltage	V _{DSF}	I _{DR} = 8A, V _{GS} = 0			−1.7	V
Input capacitance	C _{iss}	V _{DS} =10V, V _{GS} = 0, f=1MHz		1500		pF
Output capacitance	C _{oss}			340		pF
Feedback capacitance	C _{rss}			130		pF
Turn-on time	t _{on}	V _{DD} =100V, I _D = 5A V _{GS} =10V, R _L = 20Ω		60		ns
Fall time	t _f			80		ns
Turn-off time (delay time)	t _{d(off)}			240		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



$I_D - V_{DS}$  $|Y_{fs}| - I_D$  $R_{DS(on)} - I_D$  $I_D - V_{GS}$  $C_{iss}, C_{oss}, C_{rss} - V_{DS}$  $t_{on}, t_r, t_f, t_{d(off)} - I_D$  $P_D - T_a$ 

Area of safe operation (ASO)

 $R_{DS(on)} - I_D$ 