

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

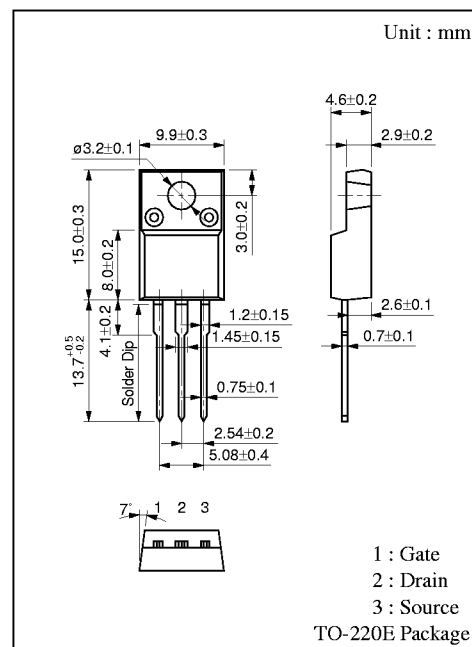
■ Applications

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

■ Absolute Maximum Ratings (Tc = 25°C)

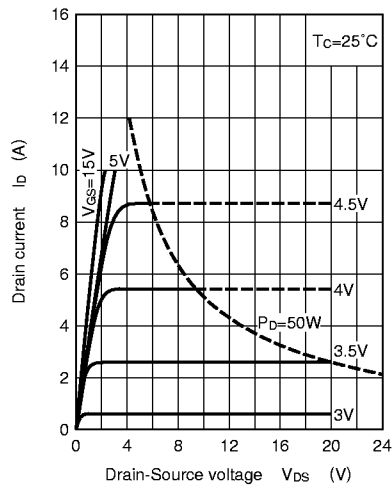
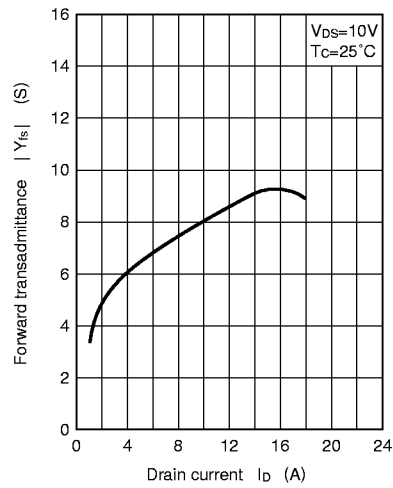
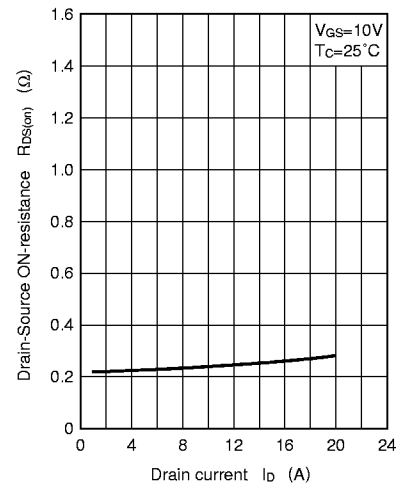
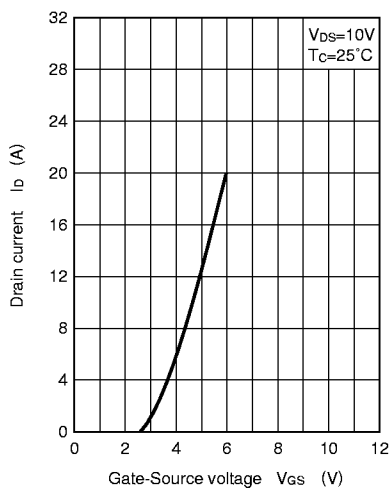
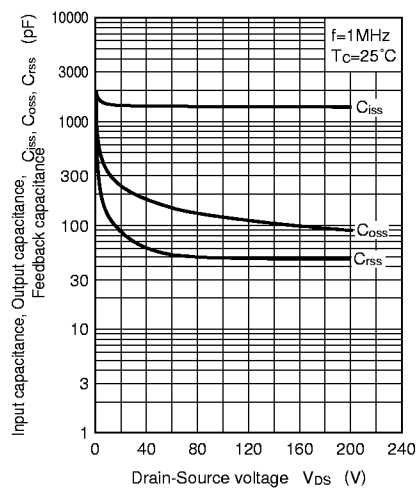
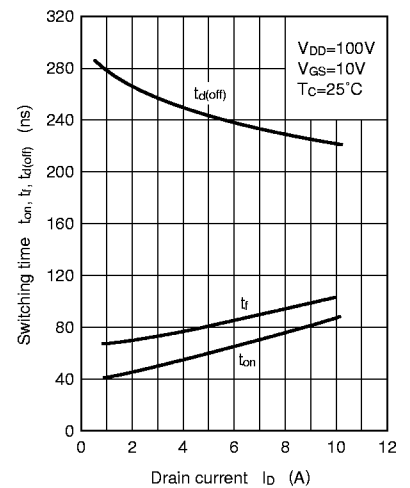
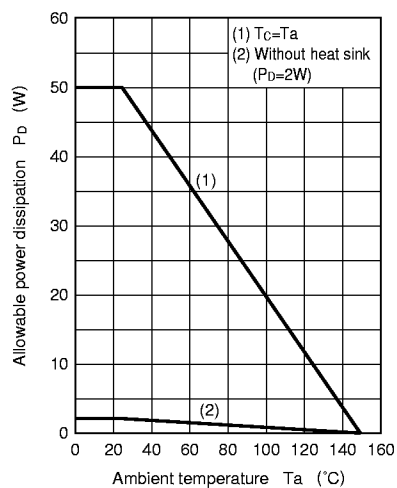
Parameter		Symbol	Rating	Unit
Drain-Source breakdown voltage		V_{DSS}	250	V
Gate-Source voltage		V_{GSS}	± 20	V
Drain current	DC	I_D	± 10	A
	Pulse	I_{DP}	± 20	A
Avalanche energy capability		EAS^*	5	mJ
Allowable power dissipation	$T_C = 25^\circ C$	P_D	50	W
	$T_a = 25^\circ C$		2	
Channel temperature		T_{ch}	150	$^\circ C$
Storage temperature		T_{stg}	-55 to $+150$	$^\circ C$

* $L=0.1\text{mH}$, $I_L=10\text{A}$, 1 pulse

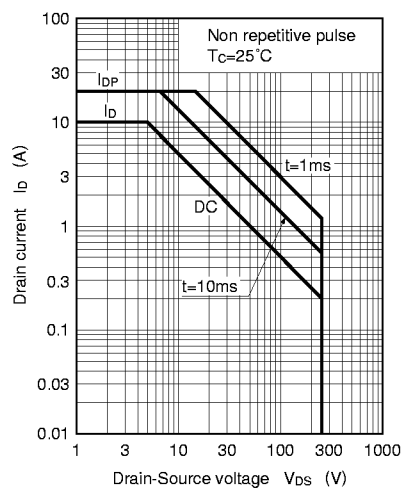


■ Electrical Characteristics (T_c = 25°C)

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}	$V_{GS}=\pm 20V, V_{DS}=0$			± 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}	$V_{DD}=100V, I_D=5A$ $V_{GS}=10V, R_L=20\Omega$		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	$^{\circ}C/W$
Channel-Atmosphere heat resistance	$R_{th(ch-a)}$				62.5	$^{\circ}C/W$

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

Area of safe operation (ASO)

 $R_{DS(on)} - I_D$ 