

2SK2588

Silicon N-Channel Power F-MOS

■ Features

- High-speed switching
- Low ON-resistance
- No secondary breakdown
- Low-voltage drive

■ Applications

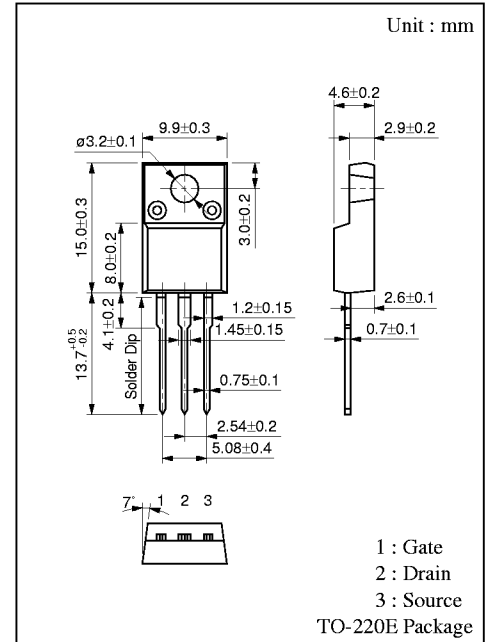
- Non-contact relay
- Solenoid drive
- Motor drive
- Control equipment
- Switching mode regulator

■ Absolute Maximum Ratings (T_c = 25°C)

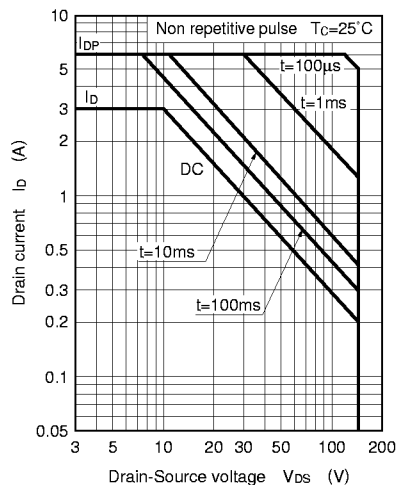
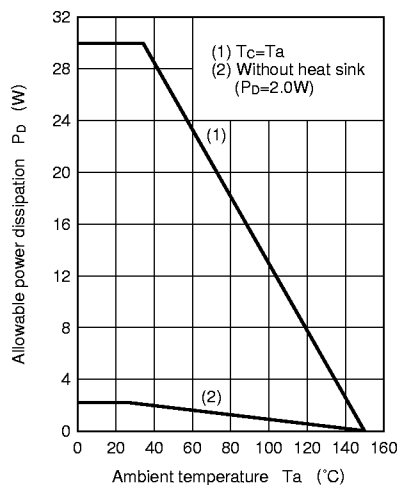
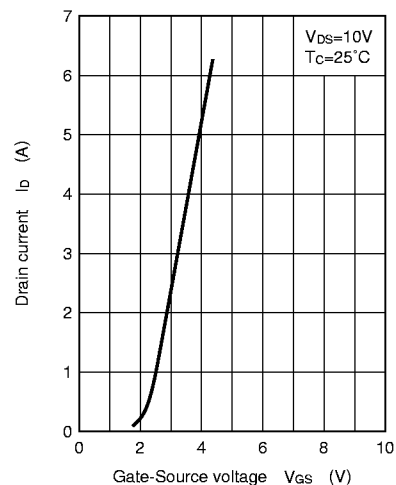
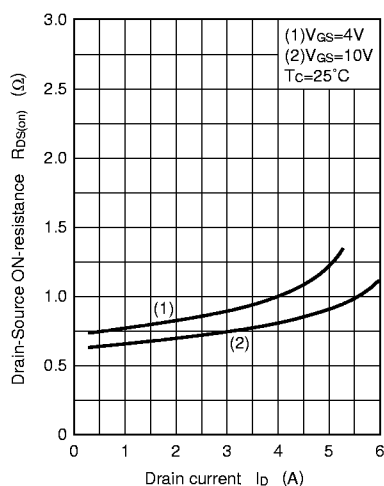
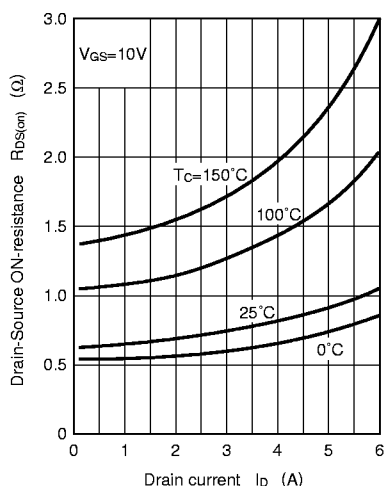
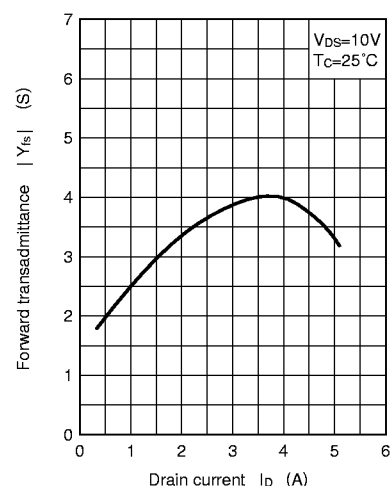
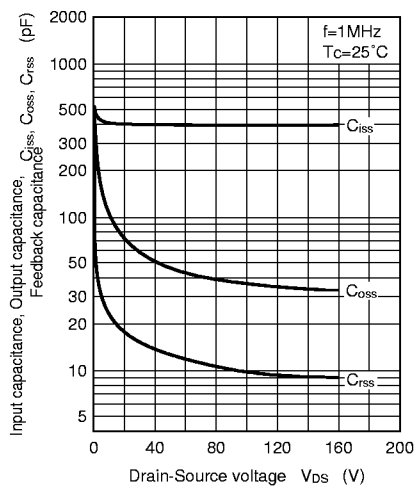
Parameter	Symbol	Rating	Unit
Drain-Source breakdown voltage	V _{DSS}	150	V
Gate-Source voltage	V _{GSS}	±20	V
Drain current	DC	I _D	±3
	Pulse	I _{DP}	±6
Allowable power dissipation	T _C = 25°C	P _D	30
	T _a = 25°C		2
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	−55 to +150	°C

■ Electrical Characteristics (T_c = 25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source cut-off current	I _{DSS}	V _{DS} =130V, V _{GS} = 0			10	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	150			V
Gate threshold voltage	V _{th}	V _{DS} =10V, I _D =1mA	1		2.5	V
Drain-Source ON-resistance	R _{DS(on)1}	V _{GS} =10V, I _D = 2A		0.7	1.1	Ω
	R _{DS(on)2}	V _{GS} = 4V, I _D = 2A		0.8	1.3	Ω
Forward transadmittance	Y _{fs}	V _{DS} =10V, I _D = 2A	2	3.4		S
Diode forward voltage	V _{DSF}	I _{DR} = 3A, V _{GS} = 0			−1.7	V
Input capacitance	C _{iss}	V _{DS} =10V, V _{GS} = 0, f=1MHz		428		pF
Output capacitance	C _{oss}			97		pF
Feedback capacitance	C _{rss}			22		pF
Turn-on time	t _{on}	V _{DD} =100V, I _D = 2A V _{GS} =10V, R _L =50Ω		24		ns
Fall time	t _f			36		ns
Turn-off time (delay time)	t _{d(off)}			96		ns
Channel-Case heat resistance	R _{th(ch-c)}				4.17	°C/W
Channel-Atmosphere heat resistance	R _{th(ch-a)}				62.5	°C/W



Area of safe operation (ASO)

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