

2SK2659

Silicon N-Channel Power F-MOS

■ Features

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

■ Applications

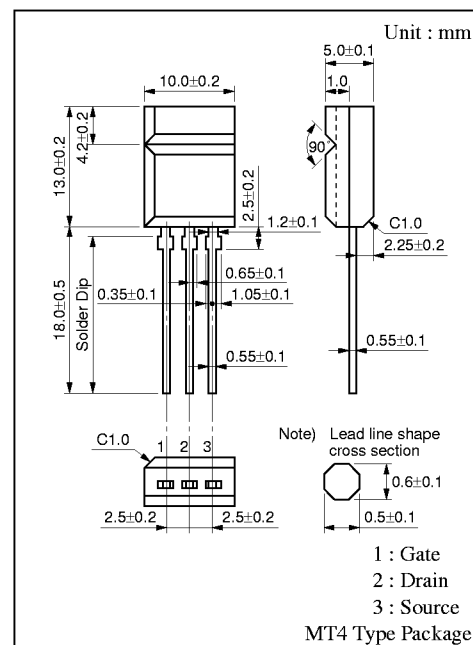
- Non-contact relay
- Solenoid drive
- Motor drive
- Control equipment
- Switching mode regulator

■ Absolute Maximum Ratings (T_c = 25°C)

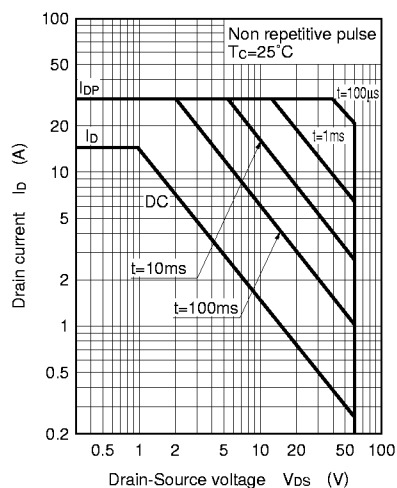
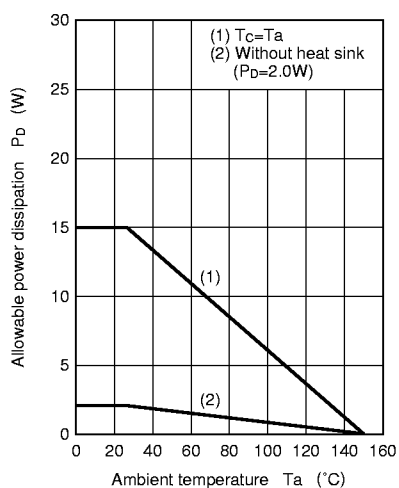
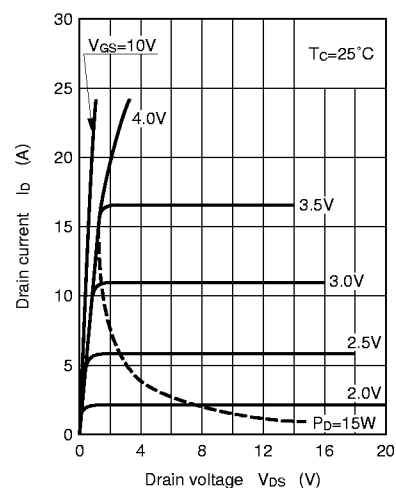
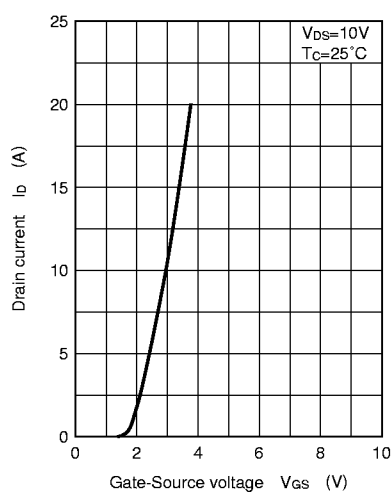
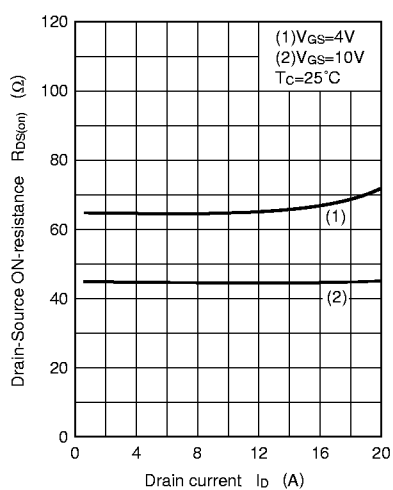
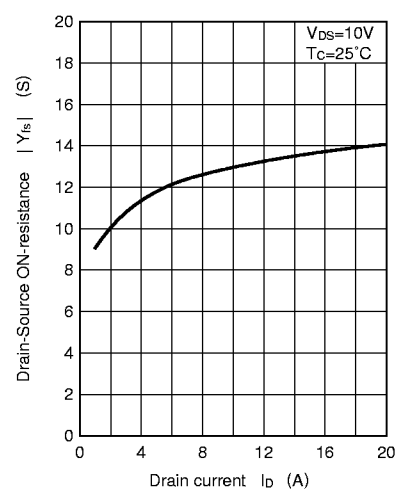
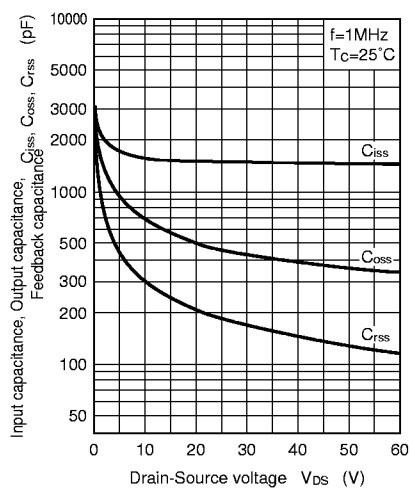
Parameter	Symbol	Rating	Unit
Drain-Source breakdown voltage	V _{DSS}	60	V
Gate-Source voltage	V _{GSS}	±20	V
Drain current	DC	I _D	±15
	Pulse	I _{DP}	±30
Allowable power dissipation	T _c = 25°C	P _D	15
	T _a = 25°C		2
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

■ Electrical Characteristics (T_c = 25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source cut-off current	I _{DSS}	V _{DS} = 40V, 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	60			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 = 10A		45	70	mΩ
	R _{DS(on)2}	V _{GS} = 4V, I _D = 6A		65	100	mΩ
Forward transadmittance	Y _{fs}	V _{DS} = 10V, I _D = 10A	8	13		S
Diode forward voltage	V _{DSF}	I _{DR} = 10A, V _{GS} = 0			-1.7	V
Input capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0, f = 1MHz		1550		pF
Output capacitance	C _{oss}			680		pF
Feedback capacitance	C _{rss}			300		pF
Turn-on time	t _{on}	V _{DD} = 30V, I _D = 10A V _{GS} = 10V, R _L = 3Ω		90		ns
Fall time	t _f			180		ns
Turn-off time (delay time)	t _{d(off)}			360		ns
Channel-Case heat resistance	R _{th(ch-c)}				8.33	°C/W
Channel-Atmosphere heat resistance	R _{th(ch-a)}				62.5	°C/W



Area of safe operation (ASO)

P_D – T_aI_D – V_{GS}R_{DS(on)} – I_DR_{DS(on)} – I_D|Y_{fs}| – I_DC_{iss}, C_{oss}, C_{rss} – V_{DS}t_{on}, t_f, t_{d(off)} – I_D