

2SK1258

Silicon N-channel Power F-MOS FET

■ Features

- Low ON resistance $R_{DS(on)}$: $R_{DS(on)1} = 0.02\Omega$ (typ.)
- High switching rate : $t_r = 350\text{ns}$ (typ.)
- No secondary breakdown
- High breakdown voltage
- Low voltage drive is possible ($V_{GS} = 4\text{V}$).

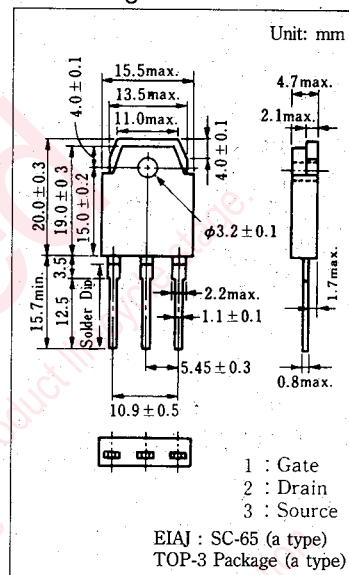
■ Application

- DC-DC converter
- No contact relay
- Solenoid drive
- Motor drive

■ Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

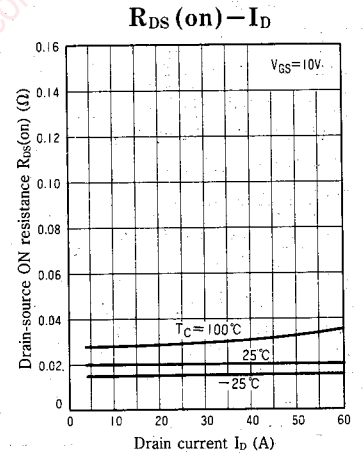
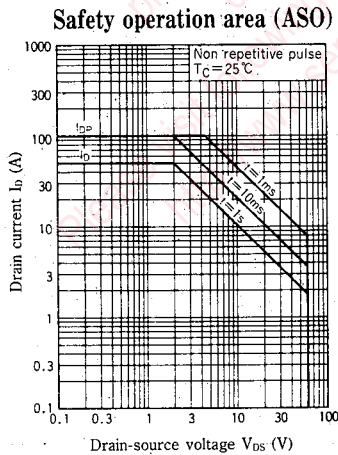
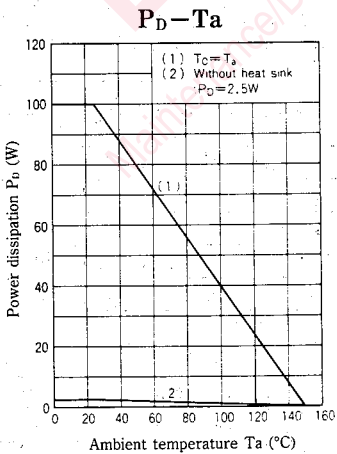
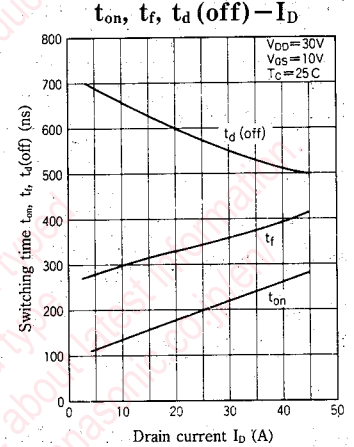
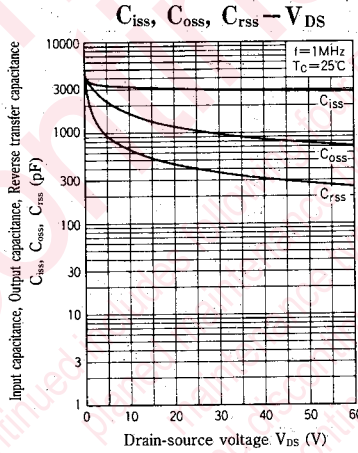
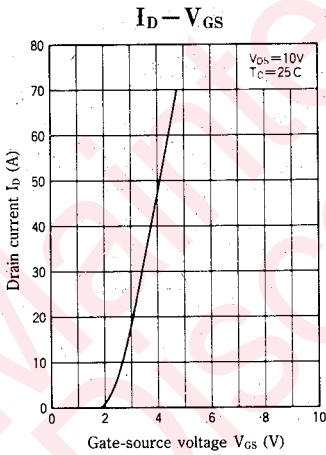
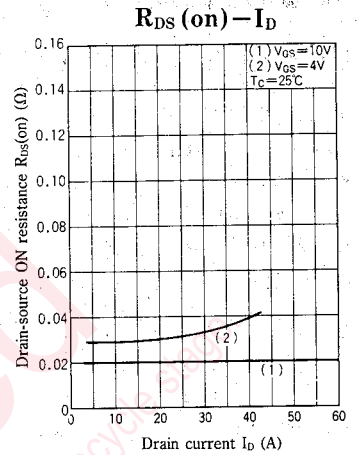
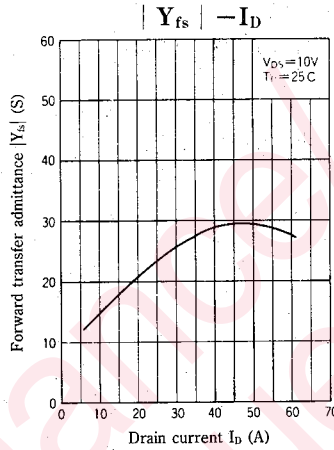
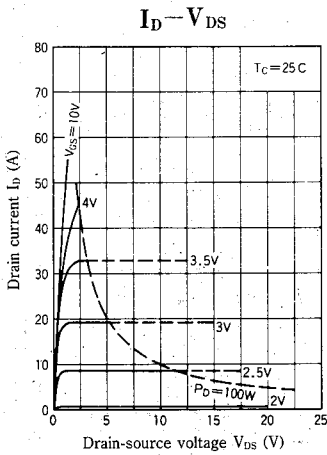
Item	Symbol	Value	Unit
Drain-source voltage	V_{DSS}	60	V
Gate-source voltage	V_{GSS}	± 20	V
Drain current	At 4V driving	I_D	25
	DC	I_D	50
	Peak-to-peak value	I_{DP}	100
Power dissipation	$T_c = 25^\circ\text{C}$	P_D	100
	$T_a = 25^\circ\text{C}$	P_D	2.5
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

■ Package Dimensions



■ Electrical Characteristics ($T_c = 25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Drain current	I_{DSS}	$V_{DS} = 40\text{V}, V_{GS} = 0$			10	μA
Gate-source current	I_{GSS}	$V_{GS} = \pm 20\text{V}, V_{DS} = 0$			± 1	μA
Drain-source voltage	V_{DSS}	$I_D = 1\text{mA}, V_{GS} = 0$	60			V
Gate threshold voltage	V_{th}	$V_{DS} = 10\text{V}, I_D = 1\text{mA}$	1		2.5	V
Drain-source ON resistance	$R_{DS(on)1}$	$V_{GS} = 10\text{V}, I_D = 25\text{A}$		0.02	0.03	Ω
Drain-source ON resistance	$R_{DS(on)2}$	$V_{GS} = 4\text{V}, I_D = 13\text{A}$		0.03	0.045	Ω
Drain-source ON voltage	$V_{DS(on)}$	$V_{GS} = 10\text{V}, I_D = 50\text{A}$			1.7	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 10\text{V}, I_D = 25\text{A}$	12	25		S
Input capacitance	C_{iss}	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{MHz}$		3200		pF
Output capacitance	C_{oss}				1600	pF
Reverse transfer capacitance	C_{rss}				550	pF
Turn-on time	t_{on}	$V_{GS} = 10\text{V}, I_D = 25\text{A}$ $V_{DD} = 30\text{V}, R_L = 1.2\Omega$		200		ns
Fall time	t_f				350	ns
Delay time	$t_d(\text{off})$				580	ns



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