

2SK2495

Silicon N-Channel Power F-MOS FET

■ Features

- Avalanche energy capacity guaranteed
- High-speed switching
- No secondary breakdown

■ Applications

- High-speed switching (switching power supply)
- For high-frequency power amplification

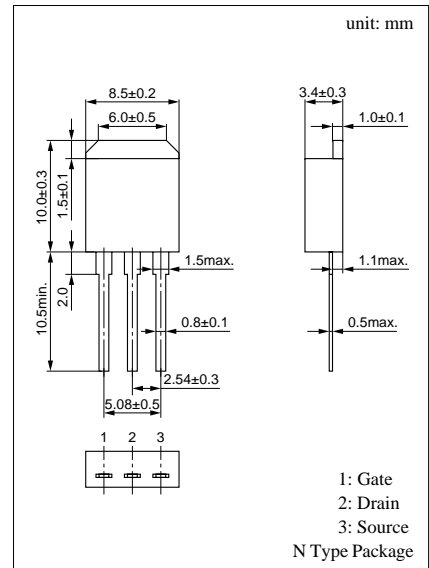
■ Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$)

Parameter	Symbol	Ratings	Unit
Drain to Source breakdown voltage	V_{DSS}	250	V
Gate to Source voltage	V_{GSS}	± 30	V
Drain current	DC	I_{D}	± 2 A
	Pulse	I_{DP}	± 4 A
Avalanche energy capacity	EAS*	10	mJ
Allowable power dissipation	$T_C = 25^\circ\text{C}$	P_{D}	30
	$T_a = 25^\circ\text{C}$		1.3
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

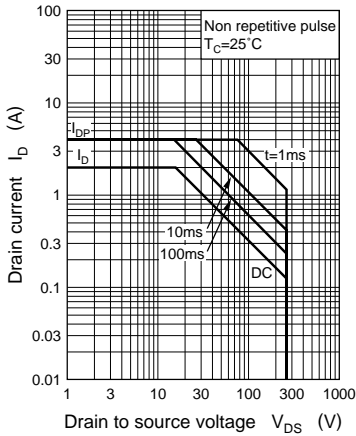
* $L = 5\text{mH}$, $I_L = 2\text{A}$, $V_{\text{DD}} = 30\text{V}$, 1 pulse

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

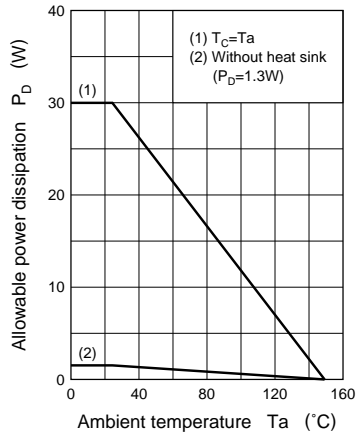
Parameter	Symbol	Conditions	min	typ	max	Unit	
Drain to Source cut-off current	I_{DSS}	$V_{\text{DS}} = 200\text{V}$, $V_{\text{GS}} = 0$			100	μA	
Gate to Source leakage current	I_{GSS}	$V_{\text{GS}} = \pm 30\text{V}$, $V_{\text{DS}} = 0$			± 1	μA	
Drain to Source breakdown voltage	V_{DSS}	$I_{\text{D}} = 1\text{mA}$, $V_{\text{GS}} = 0$	250			V	
Gate threshold voltage	V_{th}	$V_{\text{DS}} = 10\text{V}$, $I_{\text{D}} = 1\text{mA}$	1		5	V	
Drain to Source ON-resistance	$R_{\text{DS(on)}}$	$V_{\text{GS}} = 10\text{V}$, $I_{\text{D}} = 1\text{A}$		1.2	2	Ω	
Forward transfer admittance	$ Y_{\text{fs}} $	$V_{\text{DS}} = 25\text{V}$, $I_{\text{D}} = 1\text{A}$	0.5	1		S	
Diode forward voltage	V_{DSF}	$I_{\text{DR}} = 2\text{A}$, $V_{\text{GS}} = 0$			-1.6	V	
Input capacitance (Common Source)	C_{iss}	$V_{\text{DS}} = 10\text{V}$, $V_{\text{GS}} = 0$, $f = 1\text{MHz}$		220		pF	
Output capacitance (Common Source)	C_{oss}				60		pF
Reverse transfer capacitance (Common Source)	C_{rss}				20		pF
Turn-on time (delay time)	$t_{\text{d(on)}}$	$V_{\text{DD}} = 200\text{V}$, $I_{\text{D}} = 2\text{A}$ $V_{\text{GS}} = 10\text{V}$, $R_{\text{L}} = 100\Omega$		10		ns	
Rise time	t_{r}				20		ns
Fall time	t_{f}				45		ns
Turn-off time (delay time)	$t_{\text{d(off)}}$				90		ns
Thermal resistance between channel and case	$R_{\text{th(ch-c)}}$				4.17	$^\circ\text{C/W}$	
Thermal resistance between channel and atmosphere	$R_{\text{th(ch-a)}}$				96.2	$^\circ\text{C/W}$	



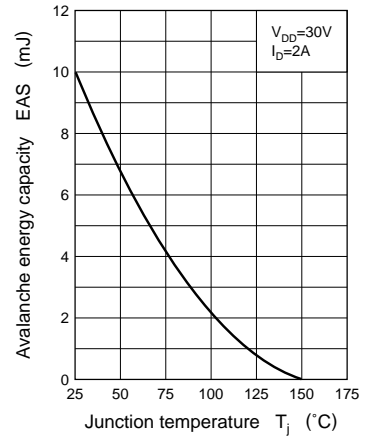
Area of safe operation (ASO)



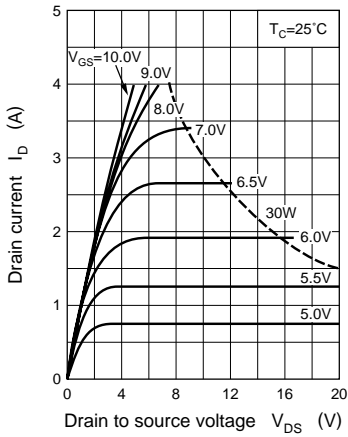
$P_D - T_a$



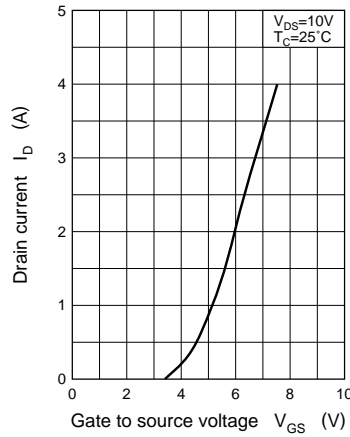
EAS — T_j



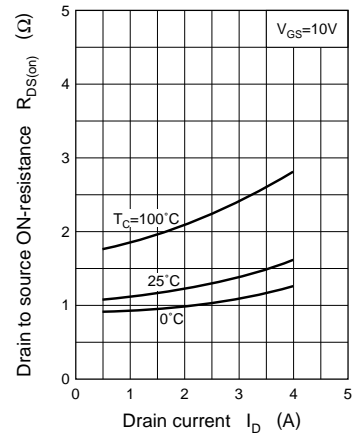
$I_D - V_{DS}$



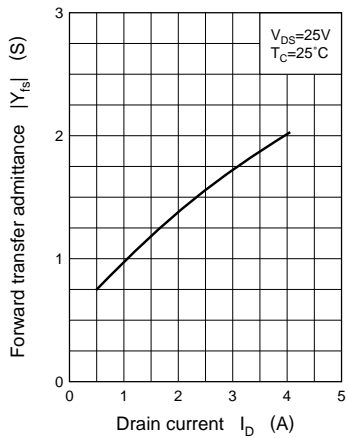
$I_D - V_{GS}$



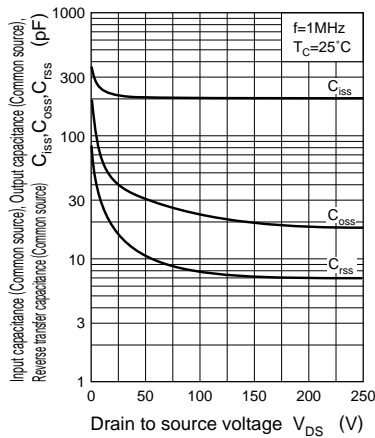
$R_{DS(on)} - I_D$



$|Y_{fs}| - I_D$



$C_{iss}, C_{oss}, C_{rss} - V_{DS}$



$t_{d(on)}, t_r, t_f, t_{d(off)} - I_D$

