

2SK2797

Silicon N-Channel Power F-MOS FET

■ Features

- Avalanche energy capacity guaranteed: EAS > 10mJ
- High-speed switching: $t_f = 15\text{ns}$
- No secondary breakdown

■ Applications

- For high-speed switching
- For high-frequency power amplification

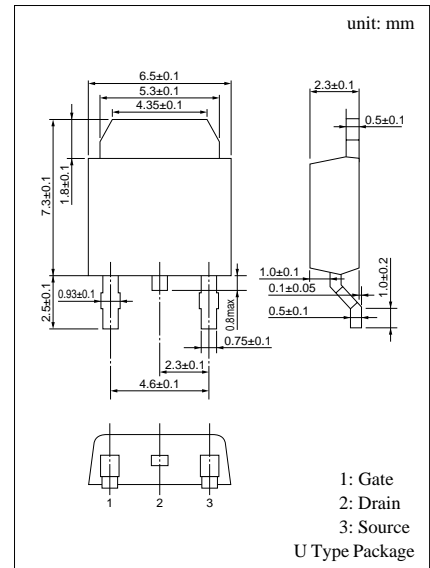
■ Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$)

Parameter	Symbol	Ratings	Unit
Drain to Source breakdown voltage	V_{DSS}	200	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 ^{*1}	10	mJ
Allowable power dissipation	$T_C = 25^\circ\text{C}$	P_D ^{*2}	10
	$T_a = 25^\circ\text{C}$		1
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

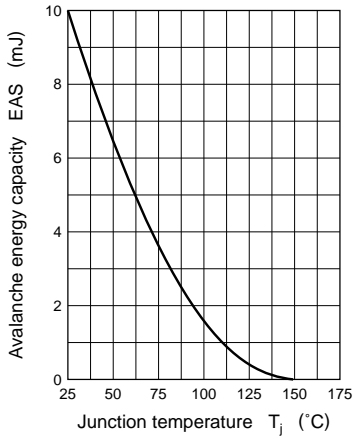
^{*1} Avalanche energy capacity guaranteed ^{*2} $T_C = 25^\circ\text{C}$

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

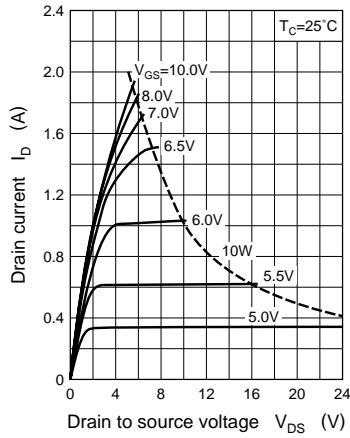
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source cut-off current	I_{DSS}	$V_{DS} = 160\text{V}, V_{GS} = 0$			100	μA
Drain reverse current	Continuous				2	A
	Pulse				4	A
Gate to Source leakage current	I_{GSS}	$V_{GS} = \pm 30\text{V}, V_{DS} = 0$			± 1	μA
Drain to Source breakdown voltage	V_{DSS}	$I_D = 1\text{mA}, V_{GS} = 0$	200			V
Gate threshold voltage	V_{th}	$V_{DS} = 25\text{V}, I_D = 1\text{mA}$	1		5	V
Diode forward voltage	V_{DSF}	$I_{DR} = 2\text{A}, V_{GS} = 0$			-1.6	V
Drain to Source ON-resistance	$R_{DS(on)}$	$V_{GS} = 10\text{V}, I_D = 1\text{A}$		2.6	3.5	Ω
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 25\text{V}, I_D = 1\text{A}$	0.5	1		S
Input capacitance (Common Source)	C_{iss}	$V_{DS} = 20\text{V}, V_{GS} = 0, f = 1\text{MHz}$		125		pF
Output capacitance (Common Source)	C_{oss}			25		pF
Reverse transfer capacitance (Common Source)	C_{rss}			5		pF
Turn-on time (delay time)	$t_{d(on)}$	$V_{GS} = 10\text{V}, I_D = 1\text{A}$ $R_L = 100\Omega, V_{DD} = 100\text{V}$		10		ns
Rise time	t_r			10		ns
Fall time	t_f			20		ns
Turn-off time (delay time)	$t_{d(off)}$			15		ns
Thermal resistance between channel and case	$R_{th(ch-c)}$				12.5	$^\circ\text{C/W}$



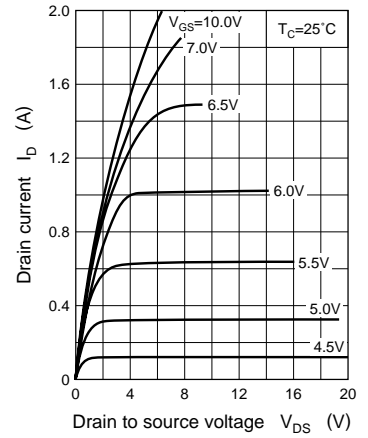
EAS — T_j



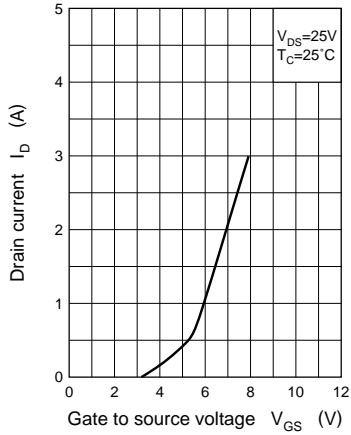
I_D — V_{DS}



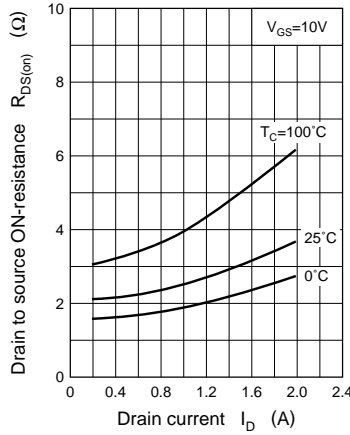
I_D — V_{DS}



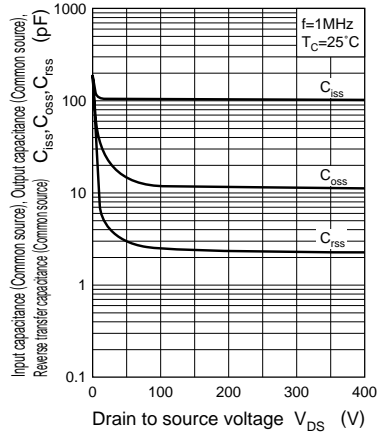
I_D — V_{GS}



$R_{DS(on)}$ — I_D



C_{iss} , C_{oss} , C_{rss} — V_{DS}



$|Y_{fs}|$ — I_D

