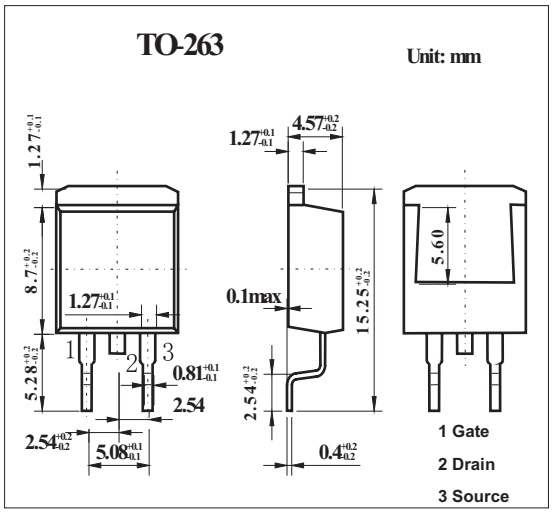
N-channel enhancement mode MOSFET

2SK3731



■ Features

- Low on-resistance, low Qg
- High avalanche resistance
- For high-speed switching

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	230	V
Gate-source surrender voltage	V_{GSS}	±30	V
Drain current	I_D	20	A
Peak drain current	I_{DP}	80	A
Avalanche energy capability *	E_{AS}	668	mJ
Power dissipation	P_D	50	W
Power dissipation Ta = 25℃		1.4	
Channel temperature	T_{ch}	150	℃
Storage temperature	T_{stg}	-55 to +150	℃

*: L = 2.79 mH, I_L = 20 A, V_{DD} = 50 V, 1 pulse, T_a = 25℃

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	I_D = 1 mA, V_{GS} = 0	230			V
Gate threshold voltage	V_{th}	V_{DS} = 10 V, I_D = 1 mA	2.0		4.0	V
Drain-source cutoff current	I_{DSS}	V_{DS} = 184 V, V_{GS} = 0			10	μA
Gate-source cutoff current	I_{GSS}	V_{GS} = ±30 V, V_{DS} = 0			±1	μA
Drain-source ON resistance	$R_{DS(on)}$	V_{GS} = 10 V, I_D = 10 A		65	82	mΩ
Forward transfer admittance	$\|Y_{fS}\|$	V_{DS} = 10 V, I_D = 10 A	7	14		S
Short-circuit forward transfer capacitance	C_{iss}	V_{DS} = 25 V, V_{GS} = 0, f = 1 MHz		360		pF
Short-circuit output capacitance	C_{oss}			394		pF
Reverse transfer capacitance	C_{rss}			49		pF
Turn-on delay time	$t_{d(on)}$	V_{DD} ≈ 100 V, I_D = 10 A		31		ns
Rise time	T_r	R_L = 10Ω, V_{GS} = 10 V		27		ns
Turn-off delay time	$t_{d(off)}$			214		ns
Fall time	t_f			47		ns
Diode foward voltage	V_{DSF}	I_{DR} = 20 A, V_{GS} = 0			?1.5	V
Reverse recovery time	t_{rr}	L = 230 μH, V_{DD} = 100 V		142		ns
Reverse recovery charge	Q_{rr}	I_{DR} = 10 A, di/dt = 100 A/μs		668		nC
Gate charge load	Q_g	V_{DD} = 100 V, I_D = 10 A,V_{GS} = 10 V		43		nC
Gate-source charge	Q_{gs}			6.6		nC
Gate-drain charge	Q_{gd}			16		nC
Thermal resistance (ch-c)	$R_{th(ch-c)}$				2.5	℃/W
Thermal resistance (ch-a)	$R_{th(ch-a)}$				89.2	℃/W