

2SK3530-01MR (800V/1.9Ω/7A)

1) Package

TO-220F

2) Absolute Maximum Ratings (Tc=25 unless otherwise specified)

Items	Symbols	Ratings	Units
Drain-Source Voltage	V_{DS}	800	V
Continuous Drain Current	I_D	±7	A
Pulsed Drain Current	$I_{D(pulse)}$	±28	A
Gate-Source Voltage	V_{GS}	±30	V
Repetitive and Non-Repetitive Maximum Avalanche Current	I_{AR}	7	A
Non-Repetitive Maximum Avalanche Energy	E_{AS}	235.3	mJ
Maximum Drain-Source dV/dt	dV/dt	20	kV/us
Peak Diode recovery dV/dt	dV/dt	5	kV/us
Maximum Power Dissipation	$P_D @ T_c=25$	70	W
	$P_D @ T_a=25$	2.16	W
Operating and Storage Temperature range	T_{ch}	150	
	T_{stg}	-55 ~ +150	

*1

*2

3) Electrical Characteristics (Tch=25 unless otherwise specified)

Items	Symbols	Test Conditions	min.	typ.	max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A$ $V_{GS}=0V$	800	---	---	V
Gate Threshold Voltage	$V_{GS(th)}$	$I_D=250\mu A$ $V_{DS}=V_{GS}$	3.0	---	5.0	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=800V$ $T_{ch}=25$	---	---	50	μA
		$V_{GS}=0V$ $T_{ch}=125$	---	---	500	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$	---	---	100	nA
Drain-Source On-State Resistance	$R_{DS(on)}$	$I_D=3.5A$ $V_{GS}=10V$	---	---	1.9	Ω
Input Capacitance	C_{iss}	$V_{DS}=25V$	---	830	---	pF
Output Capacitance	C_{oss}	$V_{GS}=0V$	---	100	---	
Reverse Transfer Capacitance	C_{rss}	$f=1MHz$	---	5	---	
Total Gate Charge	Q_g	$V_{cc}=400V$	---	25	---	nC
Gate to Source Charge	Q_{gs}	$I_D=7A$	---	7.5	---	
Gate to Drain (Miller) Charge	Q_{gd}	$V_{GS}=10V$	---	7	---	
Avalanche Capability	I_{AV}	$L=8.80mH$ $T_{ch}=25$	7	---	---	A
Diode Forward On-Voltage	V_{SD}	$I_F=7A, V_{GS}=0V, T_{ch}=25$	---	1.0	1.5	V

4) Thermal Characteristics

Items	Symbols	Test Conditions	min.	typ.	max.	Units
Channel to Case	$R_{th(ch-c)}$				1.79	/W
Channel to Ambient	$R_{th(ch-a)}$				58.0	/W

*1 $L=8.80mH, V_{cc}=80V$ *2 $I_F \leq -I_D, -di/dt=50A/\mu s, V_{cc} \leq BV_{DSS}, T_{ch} \leq 150^\circ C$

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