

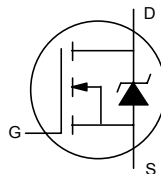


**Transys**  
**Electronics**  
**LIMITED**

# IRF630S

Power MOSFET

$V_{DSS} = 200V$ ,  $R_{DS(on)} = 0.40 \text{ ohm}$ ,  $I_D = 9.0 \text{ A}$



N Channel

Symbol

ELECTRICAL CHARACTERISTICS at $T_J = 25^\circ\text{C}$ Maximum. Unless stated Otherwise						
Parameter	Symbol	Test Conditions	Value			Unit
			Min	Typ	Max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0 \text{ V}_{DC}$ , $I_D = 250\mu\text{A}$	200	-	-	Volt
Drain to Source Leakage Current	$I_{DSS}$	$V_{DS} = 200V_{DC}$ , $V_{GS} = 0V_{DC}$	-	-	25	$\mu\text{A}$
		$V_{DS} = 160V_{DC}$ , $V_{GS} = 0V_{DC}$ , $T_J = 125^\circ\text{C}$	-	-	250	
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS} = +20V_{DC}$	-	-	100	nA
		$V_{GS} = -20V_{DC}$	-	-	-100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$ , $I_D = 250\mu\text{A}$	2.0	-	4.0	Volt
Static Drain to Source On - Resistance	$R_{DS(on)}$	$V_{GS} = 10V_{DC}$ , $I_D = 3.1\text{A}$	-	-	0.40	$\Omega$
Gate Charge	$Q_G$	$I_D = 5.9\text{A}$	-	-	43	nC
Gate to Source Charge	$Q_{GS}$	$V_{DS} = 160V_{DC}$ , $V_{GS} = 10V_{DC}$	-	-	7.0	nC
Gate to Drain Charge	$Q_{GD}$		-	-	23	nC
Input Capacitance	$C_{iss}$	$V_{DS} = 25V_{DC}$ , $V_{GS} = 0V_{DC}$ , $f = 1.0\text{MHz}$	-	800	-	pF
Output Capacitance	$C_{oss}$		-	240	-	pF
Transfer Capacitance	$C_{riss}$		-	76	-	pF
Turn On Delay Time	$t_{d(on)}$	$V_{DD} = 100V_{DC}$ , $I_D = 5.9\text{A}$ , $R_G = 12 \Omega$ $R_D = 16 \Omega$	-	9.4	-	nS
Turn Off Delay Time	$t_{d(off)}$		-	39	-	nS
Rise Time	$t_r$		-	28	-	nS
Fall Time	$t_f$		-	20	-	nS
Continuous Source Current	$I_S$			-	-	9.0
Pulsed Source Current	$I_{SM}$		-	-	36	A
Forward Voltage (Diode)	$V_{SD}$	$V_{GS} = 0V_{DC}$ , $I_S = 9.0\text{A}$ , $T_p = 300\mu\text{S}$	-	-	2.0	V

MAXIMUM RATINGS ( $T_J = 25^\circ\text{C}$ unless stated otherwise)				
Parameter	Symbol	Condition	Value	Unit
Gate to Source Voltage	$V_{GS}$		+/- 20V	Volt
Drain to Source Voltage	$V_{DSS}$		200	Volt
Continuous Drain Current	$I_D$		9.0	Amp
Pulsed Drain Current	$I_{DM}$	-	36	Amp
Total Power Dissipation	$P_D$	( $T_A = 25^\circ\text{C}$ )	74	W
Thermal Resistance (Junction to Ambient)	$R_{TH (JA)}$		62	$^\circ\text{C/W}$

Maximum Operating Temperature Range ( $T_J$ ) -55 to +150 C  
Maximum Storage Temperature Range ( $T_{stg}$ ) -55 to +150 C

## Mechanical Dimensions

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Case SMB 220 Plastic

Dim	DIMENSIONS			
	Millimetres		Inches	
	Min	Max	Min	Max
a	9.85	10.67	0.380	0.420
b	14.61	15.88	0.575	0.625
c		1.65		0.065
d	8.51	9.65	0.335	0.380
e	1.27	1.78	0.050	0.070
f	4.08	4.83	0.160	0.190
g	1.14	1.40	0.045	0.055
h	1.15	1.400	0.045	0.055
j	1.78	2.79	0.070	0.110
k	0.38	0.77	0.015	0.029
m		2.54 Pitch		0.10 Pitch
n	0.51	0.99	0.020	0.038
p	0.51	0.89	0.020	0.35

