



Maximum Ratings and Thermal Characteristics (T_A=25[°]C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	100	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current-Continuous	I _D	3	A
Drain Current-Pulsed ^(Note 1)	I _{DM}	12	A
Maximum Power Dissipation	PD	1.5	W
Operating Junction and Storage Temperature Range	TJ,TSTG	-55 To 150	°C
Thermal Resistance, Junction-to-Ambient (Note 2)	R _{θJA}	83	°C/W



Electrical Characteristics ($T_A=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Тур	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250µA	100	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V,V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V,V _{DS} =0V	-	-	±100	nA
Off Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =250µA	0.8	1.1	2.0	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =3A	-	132	140	m0
Forward Transconductance	g fs	V _{GS} =4.5V, I _D =3A	-	136	150	mΩ
Dynamic Characteristics (Note4)	· · ·					
Input Capacitance	C _{lss}	V _{DS} =50V,V _{GS} =0V,	-	650	-	PF
Output Capacitance	Coss		-	24	-	PF
Reverse Transfer Capacitance	Crss		-	20	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =50V, R _L =19Ω V _{GS} =10V,R _G =3Ω	-	6	-	nS
Turn-on Rise Time	tr		-	4	-	nS
Turn-Off Delay Time	t _{d(off)}		-	20	-	nS
Turn-Off Fall Time	t _f		-	4	-	nS
Total Gate Charge	Qg	V_{DS} =50V,I _D =3A,	-	20		nC
Gate-Source Charge	Q _{gs}		-	2.1	-	nC
Gate-Drain Charge	Q _{gd}	VGS-TUV	-	3.3	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} =0V,I _S =3A	-	-	1.2	V
Diode Forward Current (Note 2)	ls		-	-	3	А

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board, $t \le 10$ sec.

3. Pulse Test: Pulse Width \leq 300µs, Duty Cycle \leq 2%.

4. Guaranteed by design, not subject to production



TYPICAL CHARACTERISTIC CURVES





Figure 3 Switch Time Test Circuit





Figure 2 Gate charge test circuit

















PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type
CSM1020N3S89	SOT-89-3L	1000pcs

MOUNTING PAD LAYOUT



Symbol	Dimensions In Millimeters		Dimensions In Inches		
	Min	Мах	Min	Max	
A	1.400	1.600	0.055	0.063	
b	0.320	0.520	0.013	0.020	
b1	0.400	0.580	0.016	0.023	
С	0.350	0.440	0.014	0.017	
D	4.400	4.600	0.173	0.181	
D1	1.550 REF.		0.061 REF.		
E	2.300	2.600	0.091	0.102	
E1	3.940	4.250	0.155	0.167	
e	1.500 TYP.		0.060 TYP.		
e1	3.000 TYP.		0.118 TYP.		
L	0.900	1.200	0.035	0.047	



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