

CSM320NN8SOP8

30V Dual N-Channel Enhancement Mode MOSFET

Voltage

30 V

Current

8 A

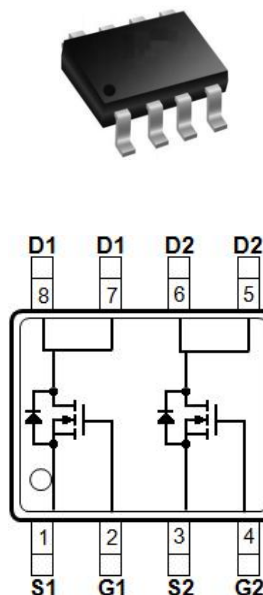
Features

- $R_{DS(ON)}$, $V_{GS}@10V, I_D@8A < 19m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V, I_D@5A < 30m\Omega$
- High switching speed
- Improved dv/dt capability
- Low Gate Charge
- Low reverse transfer capacitance

Mechanical Data

- Case: SOP-8 package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0029 ounces, 0.083 grams

SOP-8



Maximum Ratings and Thermal Characteristics ($T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V _{DS}	30	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current	T _A =25°C	I _D	8.0	A
	T _A =70°C		6.0	
Pulsed Drain Current (Note 1)		I _{DM}	32	
Power Dissipation	T _A =25°C	P _D	1.25	W
	T _A =70°C		0.8	
Operating Junction and Storage Temperature Range		T _J , T _{STG}	-55~150	°C
Typical Thermal Resistance		R _{θJA}	100	°C/W
- Junction to Ambient (Note 5)				

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	1.7	2.5	
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=8A$	-	16	19	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=5A$	-	23	30	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	-	-	1.0	uA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Dynamic (Note 6)						
Total Gate Charge	Q_g	$V_{DS}=15V, I_D=8A,$ $V_{GS}=4.5V$ (Note 2,3)	-	4.3	-	nC
Gate-Source Charge	Q_{gs}		-	1.3	-	
Gate-Drain Charge	Q_{gd}		-	1.6	-	
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $f=1.0MHz$	-	392	-	pF
Output Capacitance	C_{oss}		-	76	-	
Reverse Transfer Capacitance	C_{rss}		-	54	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=15V, I_D=1A,$ $V_{GS}=10V, R_G=6\Omega$ (Note 2,3)	-	5.9	-	ns
Turn-On Rise Time	t_r		-	11	-	
Turn-Off Delay Time	$t_{d(off)}$		-	17	-	
Turn-Off Fall Time	t_f		-	3.8	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_s	---	-	-	8.0	A
Diode Forward Voltage	V_{SD}	$I_s=1.0A, V_{GS}=0V$	-	0.73	1.0	V

NOTES :

1. Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
2. Essentially independent of operating temperature typical characteristics.
3. The maximum current rating is package limited.
4. Repetitive rating, pulse width limited by junction temperature $T_J(\text{MAX})=150^{\circ}\text{C}$. Ratings are based on low frequency and duty cycles to keep initial $T_J=25^{\circ}\text{C}$.
5. $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. Mounted on a 1 inch² with 2oz.square pad of copper.
6. Guaranteed by design, not subject to production testing.

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TYPICAL CHARACTERISTIC CURVES

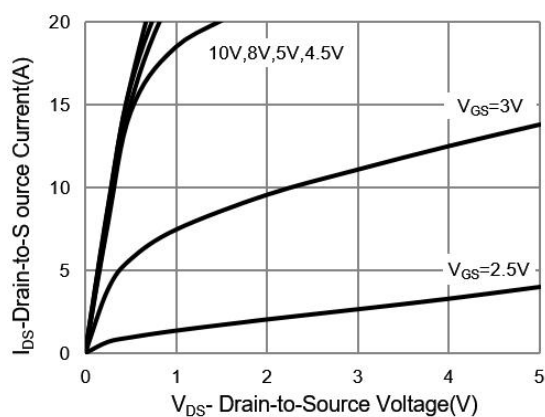


Fig.1 On-Region Characteristics

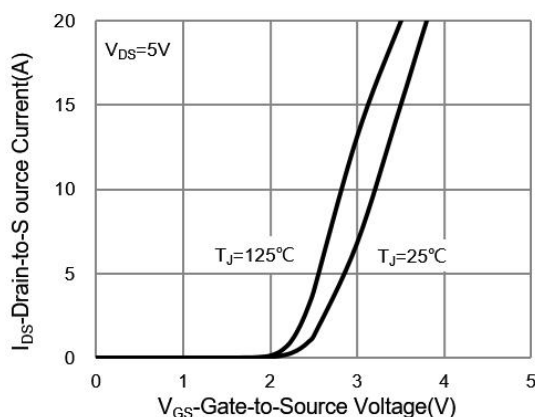


Fig.2 Transfer Characteristics

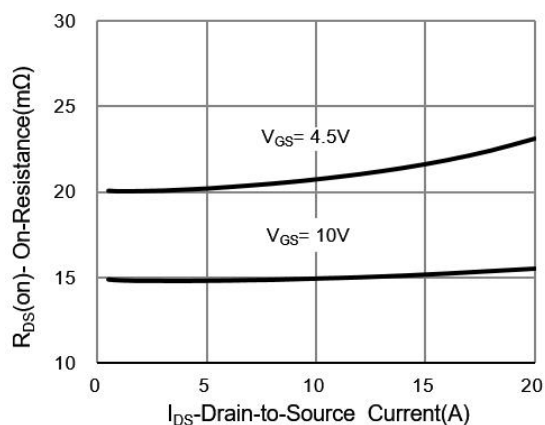


Fig.3 On-Resistance vs. Drain Current

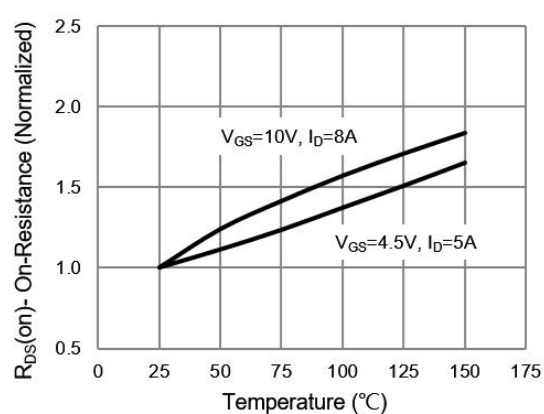


Fig.4 On-Resistance vs. Junction temperature

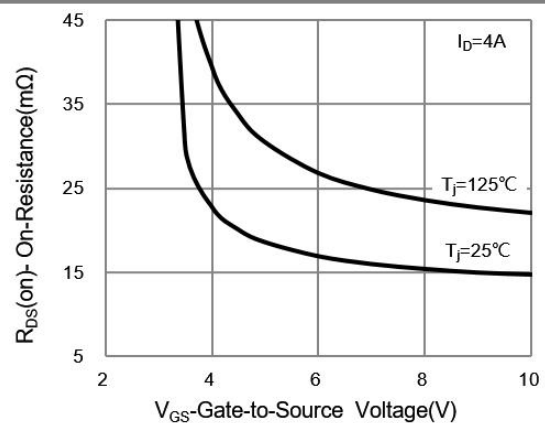


Fig.5 On-Resistance Variation with V_{GS} .

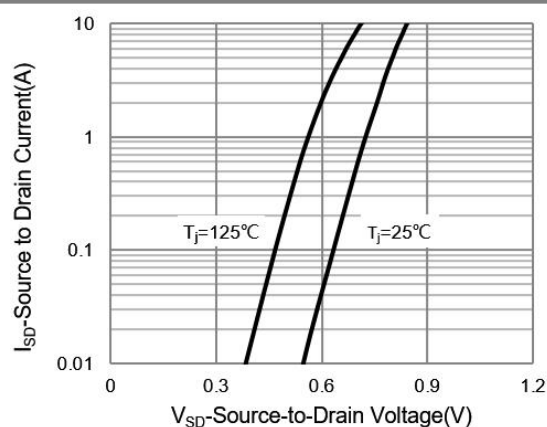


Fig.6 Body Diode Characteristics

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TYPICAL CHARACTERISTIC CURVES

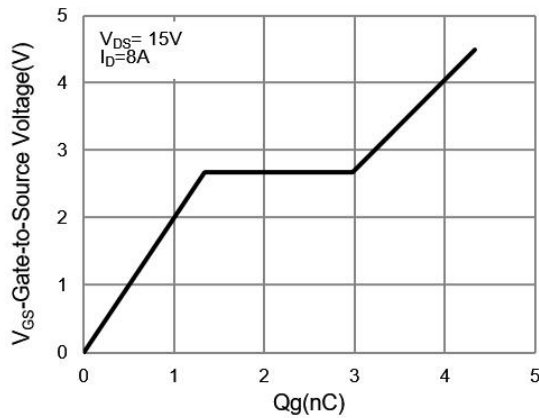


Fig.7 Gate-Charge Characteristics

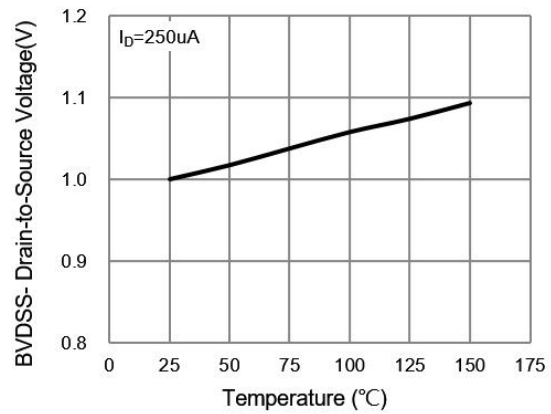


Fig.8 Breakdown Voltage Variation vs. Temperature

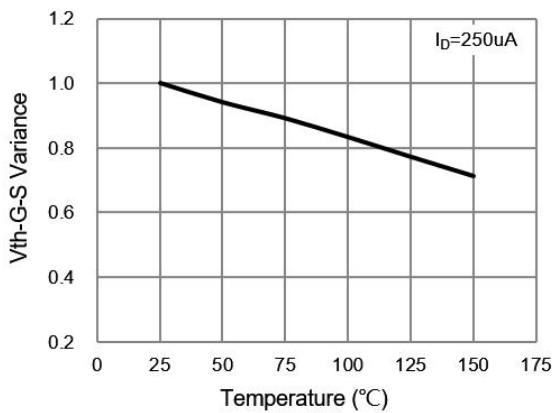


Fig.9 Threshold Voltage Variation with Temperature.

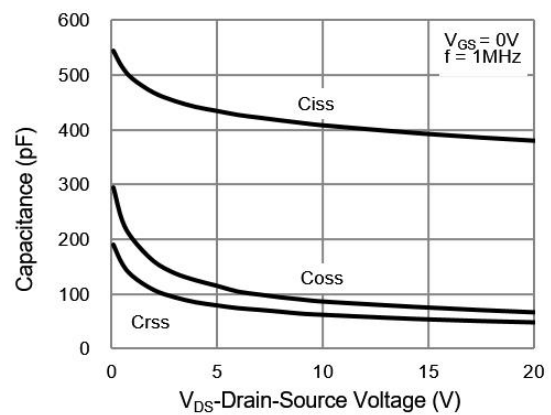


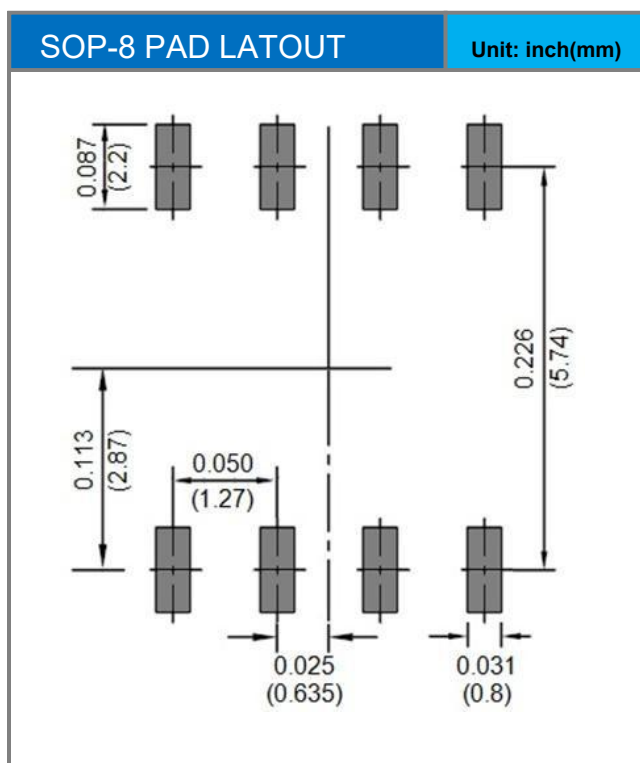
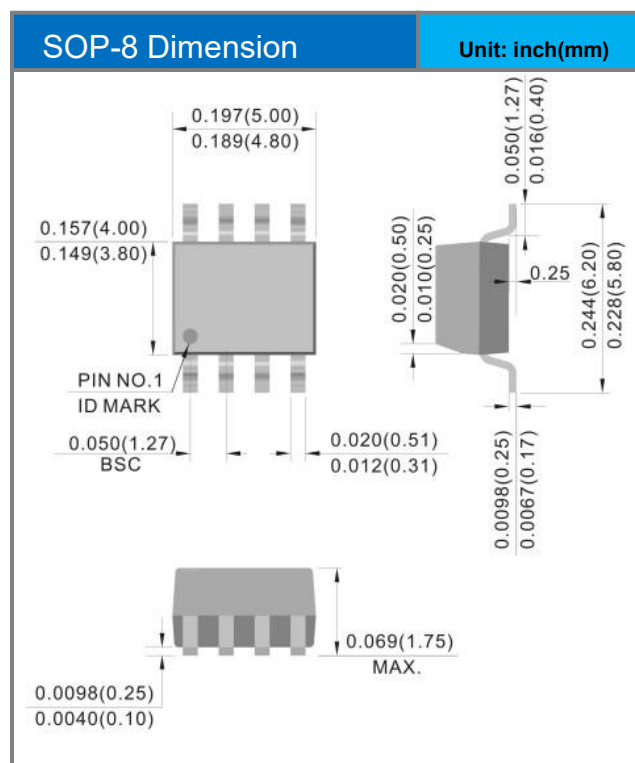
Fig.10 Capacitance vs. Drain-Source Voltage.

CSM320NN8SOP8

Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type
CSM320NN8SOP8	SOP-8	2.5K pcs / 13" reel

Packaging Information & Mounting Pad Layout



CSM320NN8SOP8

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