

Dual N-Channel Enhancement Mode Power MOSFET

Features

- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package

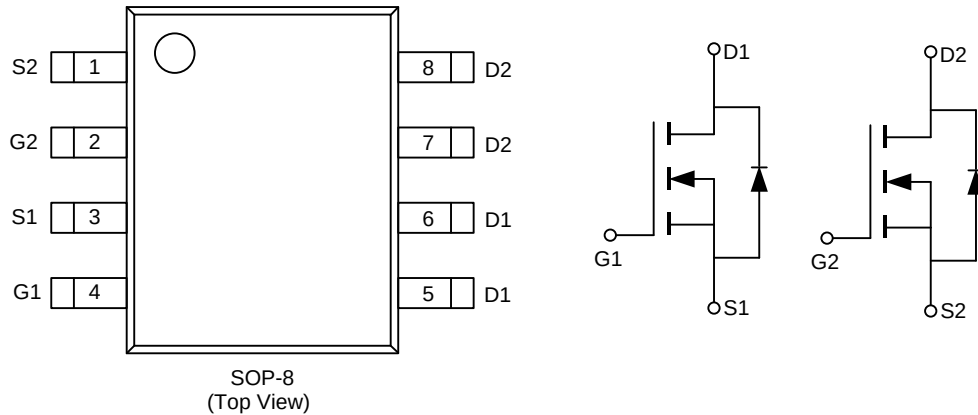
Package

- SOP8

Ordering Information

Part Number	Storage Temperature	Package
LN2323SR-G	-55°C to 150°C	SOP8

Pin Configuration



Absolute Maximum Ratings

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	2	A
Drain Current-Pulsed ^(Note 1)	I_{DM}	5	A
Maximum Power Dissipation	P_D	1.25	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	°C
Thermal Resistance, Junction-to-Ambient ^(Note 2)	$R_{\theta JA}$	100	°C/W

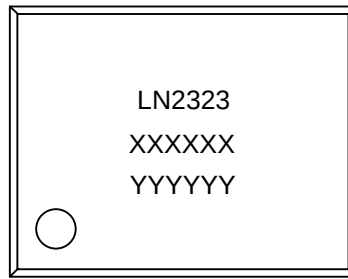
■ Electrical Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250μA	100	110		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
On Characteristics ^(Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =250μA	1.2	1.8	2.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =1A		210	240	mΩ
		V _{GS} =4.5V, I _D =2A		1000	1500	mΩ
Forward Transconductance	g _{FS}	V _{DS} =5V,I _D =1A	1			S
Dynamic Characteristics ^(Note4)						
Input Capacitance	C _{iss}	V _{DS} =50V,V _{GS} =0V, F=1.0MHz		190		pF
Output capacitance	C _{OSS}			22		pF
Reverse transfer capacitance	C _{RSS}			15		pF
Switching Characteristics ^(Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =50V I _D =1.3A R _L =39ohm V _{GS} =10V R _{GEN} =1ohm		6		nS
Turn-on Rise Time	t _r			10		nS
Turn-Off Delay Time	t _{d(off)}			10		nS
Turn-Off Fall Time	t _f			6		nS
Total Gate Charge	Q _g	V _{DS} =50V,I _D =1.3A V _{GS} =10V		5.2		nC
Gate-Source Charge	Q _{gs}			0.75		nC
Gate-Drain Charge	Q _{gd}			1.4		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage ^(Note 3)	V _{SD}	V _{GS} =0V,I _S =-1A		0.8	1.2	V
Diode Forward Current ^(Note 2)	I _S				2	A

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production

Marking Rule



SOP-8

LN2323---LN2323

XXXXXX-----process code

YYYYYY----lot code

Typical Performance Characteristics

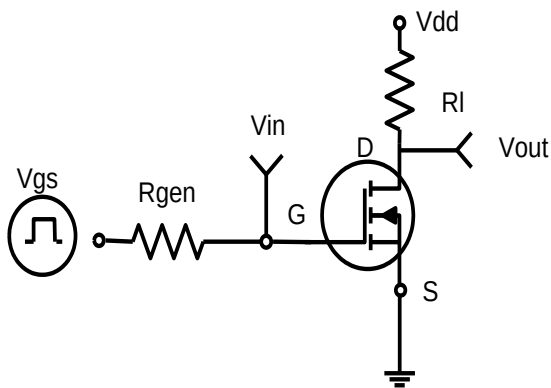


Figure 1: Switching Test Circuit

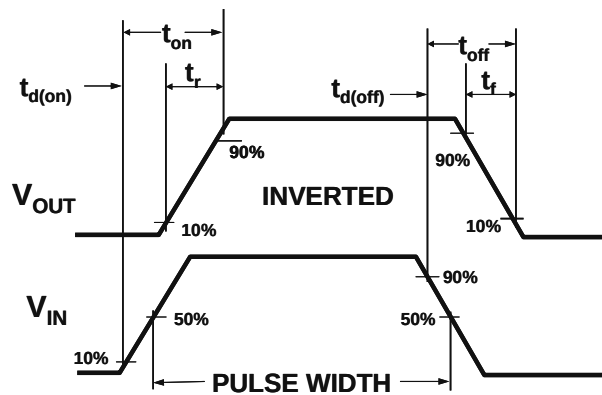


Figure 2: Switching Waveforms

Typical Electrical and Thermal Characteristics (Curves)

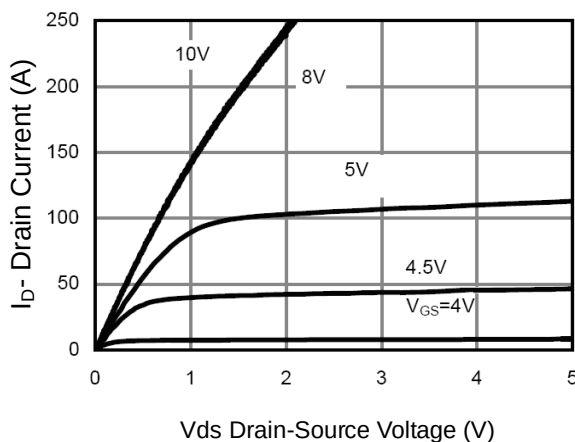


Figure 3 Output Characteristics

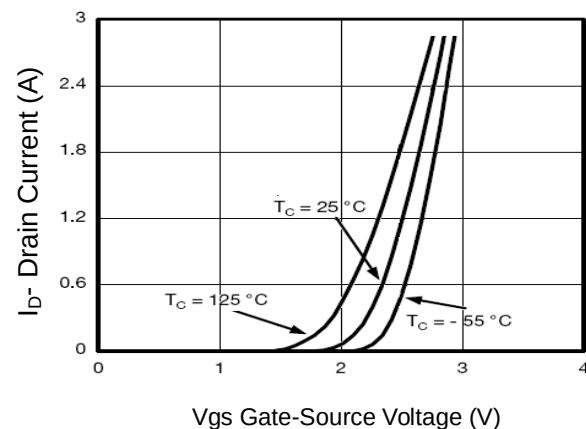


Figure 4 Transfer Characteristics

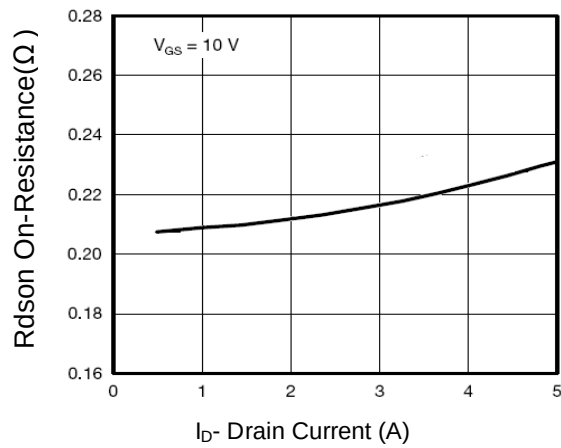


Figure 5 Rdson- Drain Current

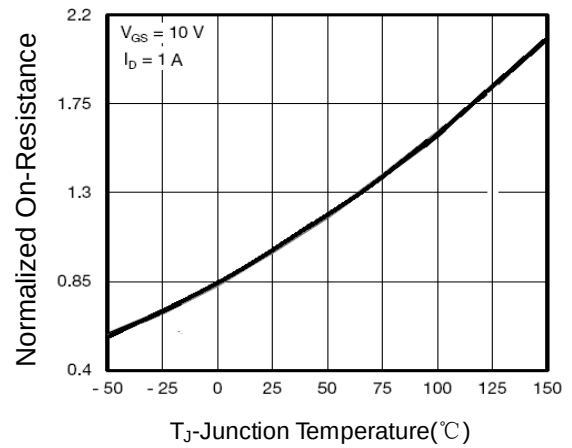


Figure 6 Rdson-Junction Temperature

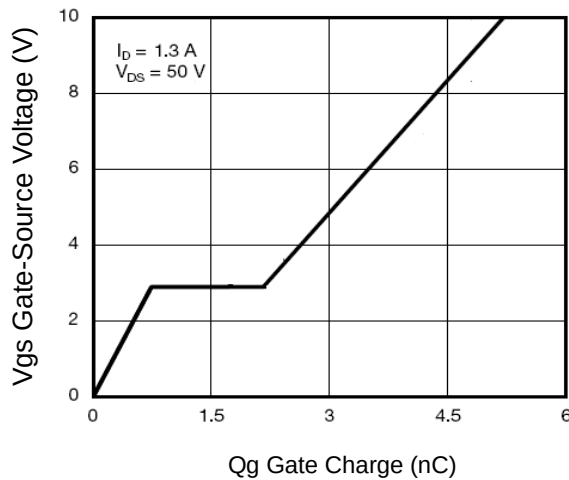


Figure 7 Gate Charge

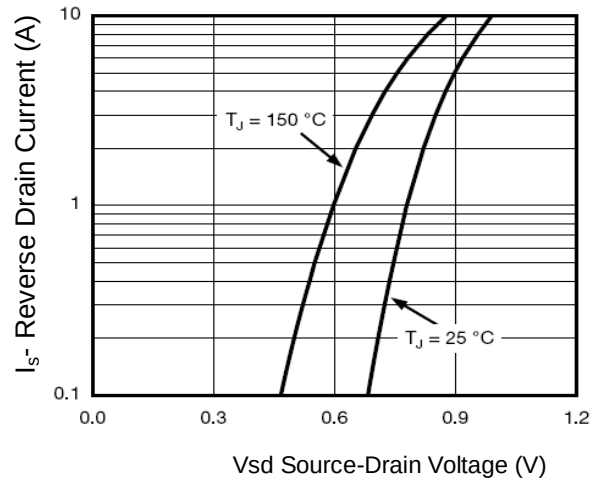


Figure 8 Source- Drain Diode Forward

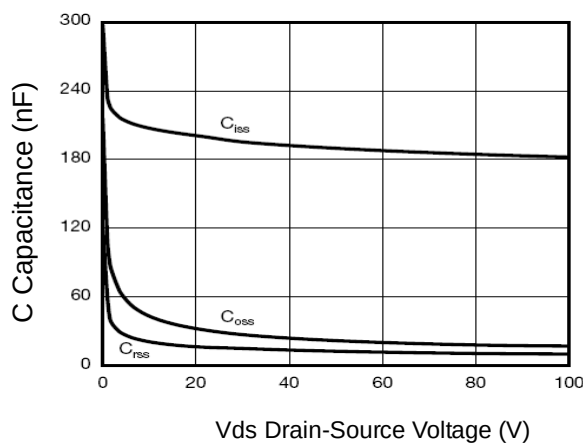


Figure 9 Capacitance vs Vds

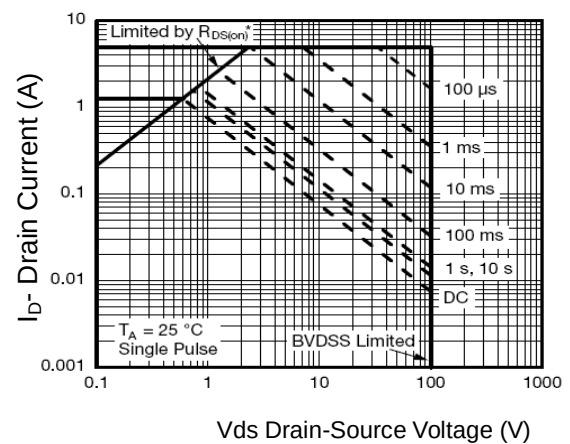
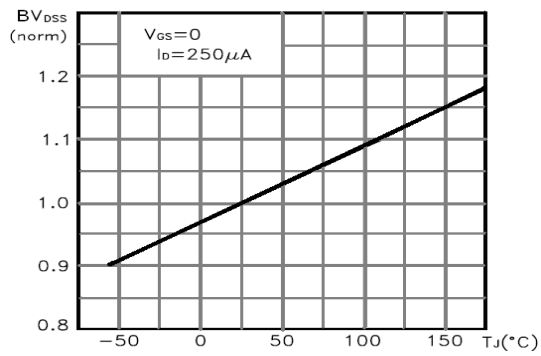


Figure 10 Safe Operation Area



T_J-Junction Temperature(°C)
Figure 11 BV_{DSS} vs Junction Temperature

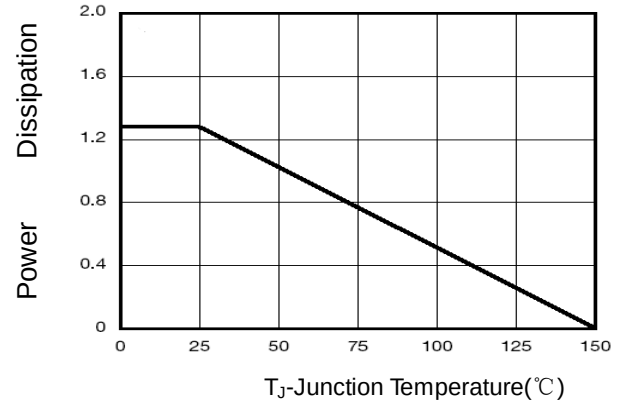


Figure 12 Power De-rating

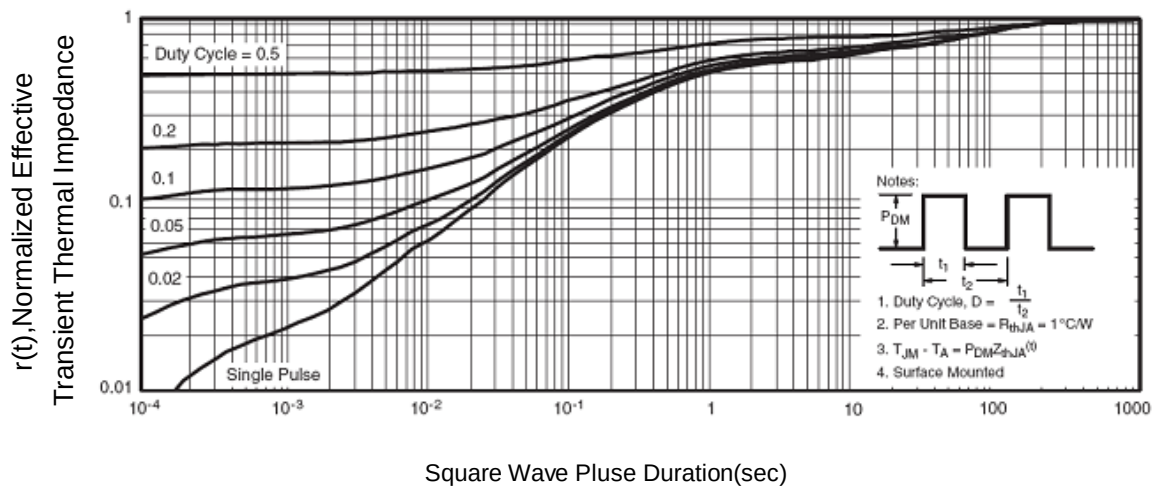
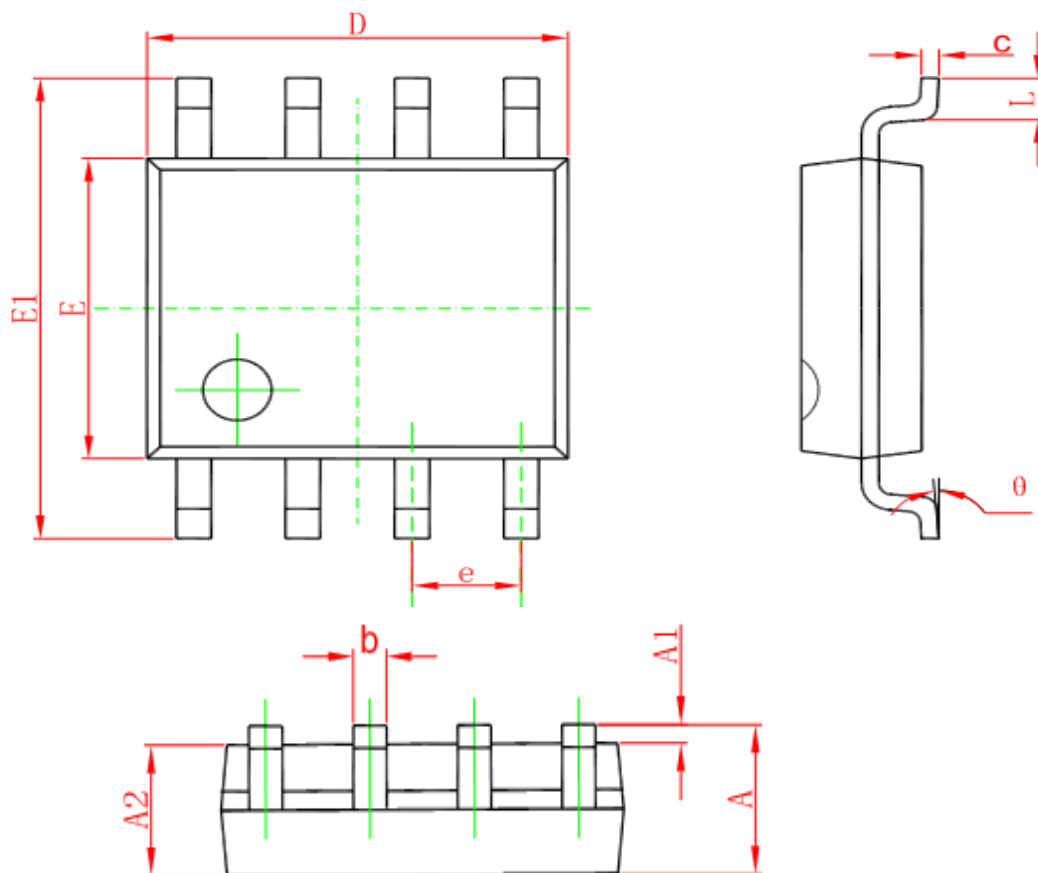


Figure 13 Normalized Maximum Transient Thermal Impedance

Package Information

- SOP8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°