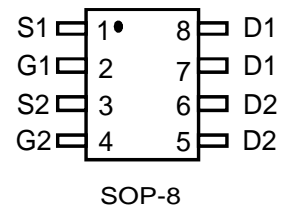
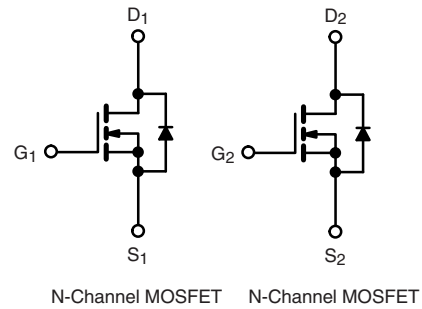


PRODUCT SUMMARY

- $V_{DS} (V) = 60V$
- $I_D = 7A (V_{GS}=10V)$
- $R_{DS(ON)} < 40m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 55m\Omega (V_{GS} = 4.5V)$



ABSOLUTE MAXIMUM RATINGS ($T_C = 25\text{ }^\circ\text{C}$, unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	$T_C = 25\text{ }^\circ\text{C}$	7
		$T_C = 125\text{ }^\circ\text{C}$	4
Continuous Source Current (Diode Conduction) ^a	I_S	3.6	A
Pulsed Drain Current ^b	I_{DM}	28	
Single Pulse Avalanche Current	I_{AS}	18	
Single Pulse Avalanche Energy	E_{AS}	16.2	mJ
Maximum Power Dissipation ^b	P_D	$T_C = 25\text{ }^\circ\text{C}$	4
		$T_C = 125\text{ }^\circ\text{C}$	1.3
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +175	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-Ambient	R_{thJA}	110	$^\circ\text{C/W}$
Junction-to-Foot (Drain)	R_{thJF}	34	

Notes

- a. Package limited.
- b. Pulse test; pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.
- c. When mounted on 1" square PCB (FR4 material).

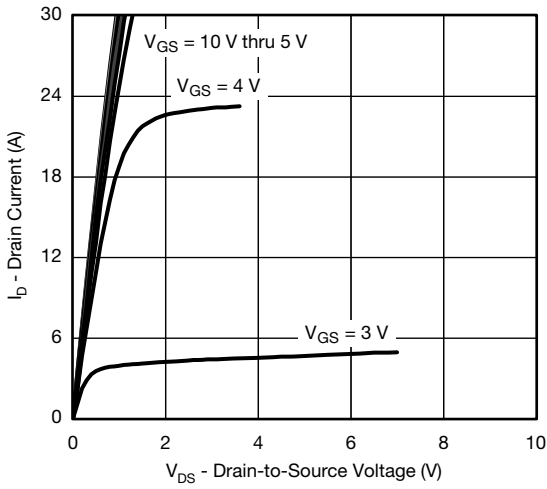
SPECIFICATIONS (T_C = 25 °C, unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	V _{DS}	V _{GS} = 0 V, I _D = 250 μA	60	-	-	V
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1.5	2.0	2.5	
Gate-Source Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 20 V	-	-	± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} = 0 V, V _{DS} = 60 V	-	-	1	μA
		V _{GS} = 0 V, V _{DS} = 60 V, T _J = 125 °C	-	-	50	
		V _{GS} = 0 V, V _{DS} = 60 V, T _J = 175 °C	-	-	150	
On-State Drain Current ^a	I _{D(on)}	V _{GS} = 10 V, V _{DS} ≥ 5 V	20	-	-	A
Drain-Source On-State Resistance ^a	R _{DS(on)}	V _{GS} = 10 V, I _D = 4.5 A	-	28	40	mΩ
		V _{GS} = 4.5 V, I _D = 4 A	-	30	55	
Forward Transconductance ^f	g _{fs}	V _{DS} = 15 V, I _D = 4.5 A	-	15	-	S
Dynamic ^b						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz	-	600	750	pF
Output Capacitance	C _{oss}		-	110	140	
Reverse Transfer Capacitance	C _{rss}		-	50	62	
Total Gate Charge ^c	Q _g	V _{GS} = 10 V, V _{DS} = 30 V, I _D = 5.3 A	-	11.7	18	nC
Gate-Source Charge ^c	Q _{gs}		-	1.8	2.7	
Gate-Drain Charge ^c	Q _{gd}		-	2.8	4.2	
Gate Resistance	R _g	f = 1 MHz	1.3	-	6	Ω
Turn-On Delay Time ^c	t _{d(on)}	V _{DD} = 30 V, R _L = 6.8 Ω I _D ≅ 4.4 A, V _{GEN} = 10 V, R _g = 1 Ω	-	7	11	ns
Rise Time ^c	t _r		-	3.3	5	
Turn-Off Delay Time ^c	t _{d(off)}		-	22.4	33.5	
Fall Time ^c	t _f		-	2.1	3.2	
Source-Drain Diode Ratings and Characteristics ^b						
Pulsed Current ^a	I _{SM}		-	-	28	A
Forward Voltage	V _{SD}	I _F = 2 A, V _{GS} = 0 V	-	0.75	1.1	V

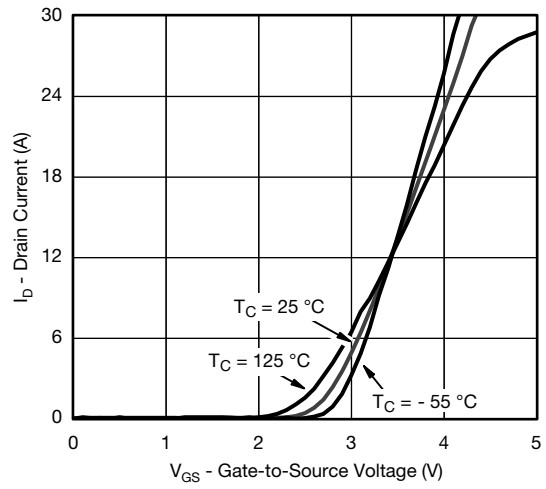
Notes

- Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2 %.
- Guaranteed by design, not subject to production testing.
- Independent of operating temperature.

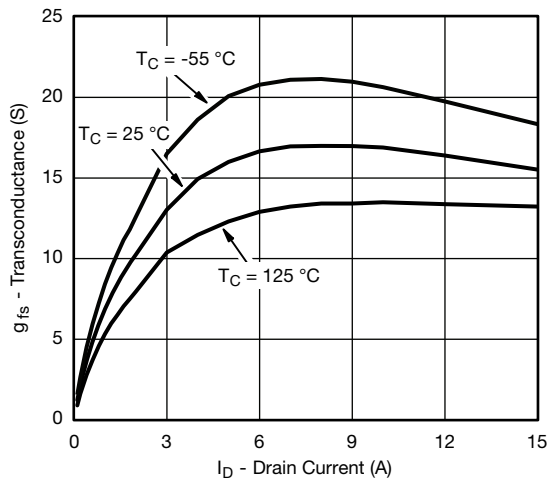
TYPICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted)



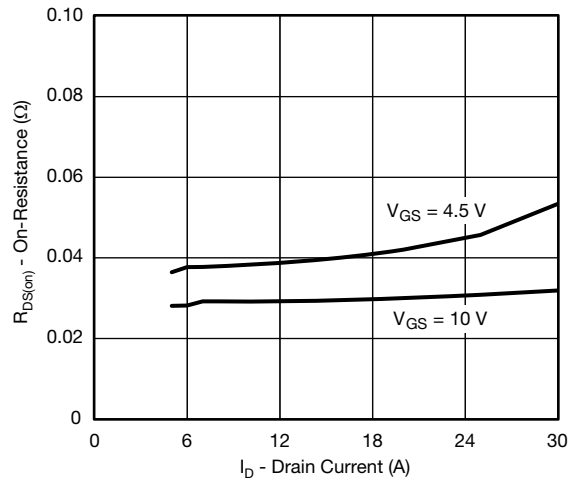
Output Characteristics



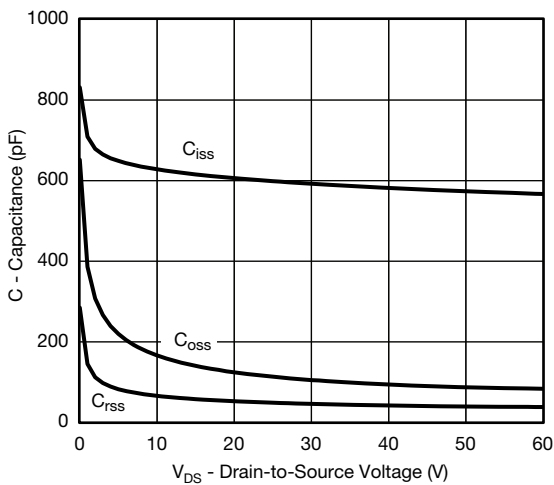
Transfer Characteristics



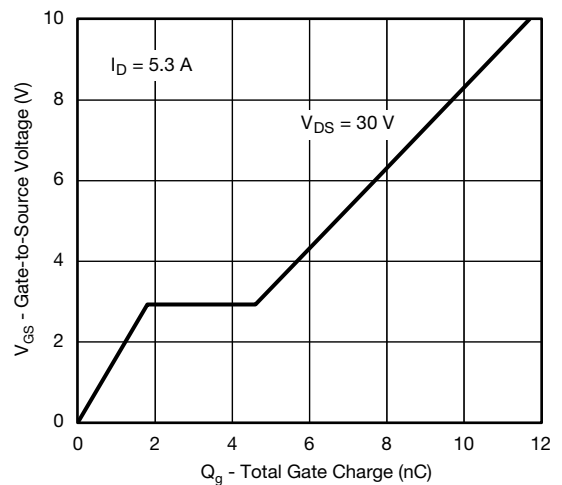
Transconductance



On-Resistance vs. Drain Current

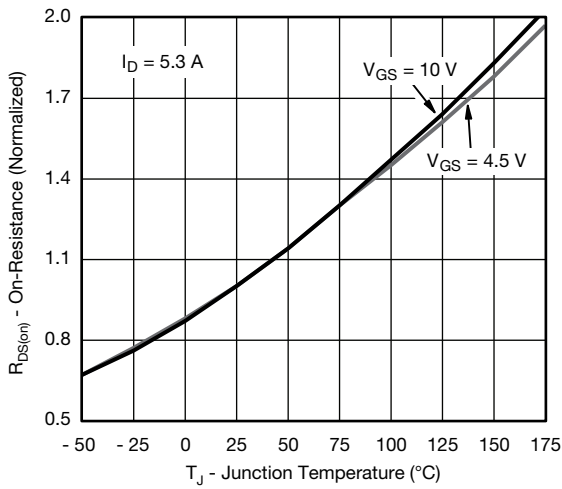


Capacitance

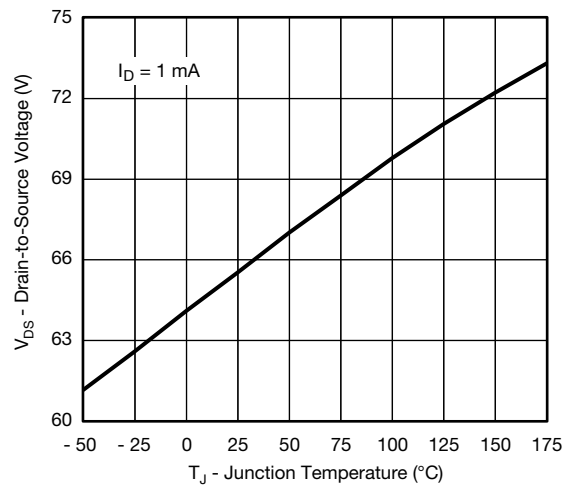


Gate Charge

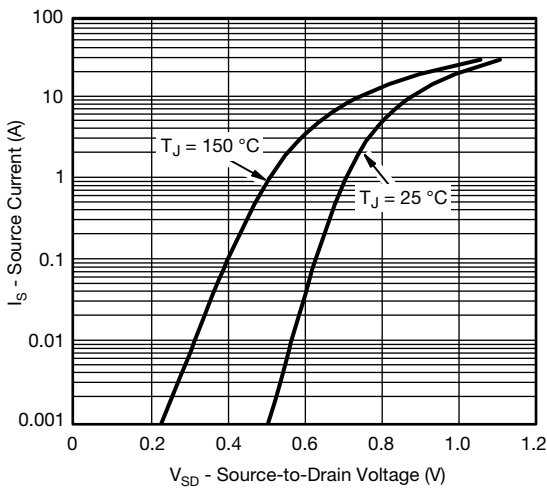
TYPICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted)



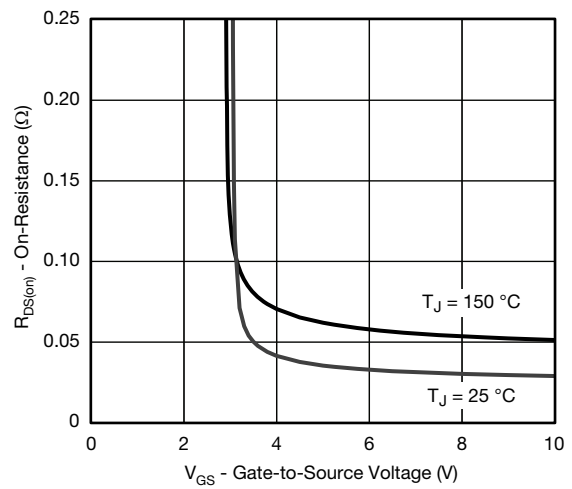
On-Resistance vs. Junction Temperature



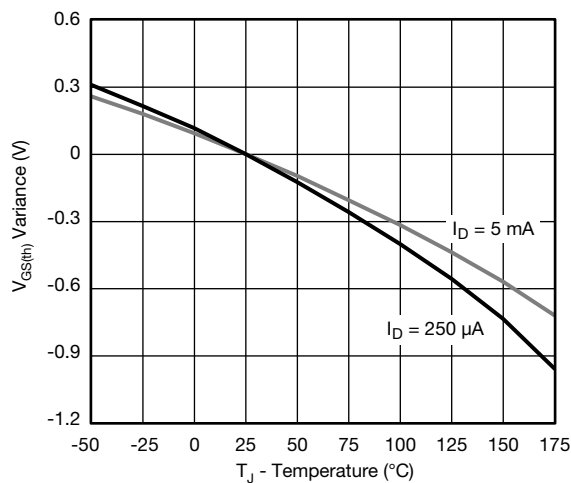
Drain Source Breakdown vs. Junction Temperature



Source Drain Diode Forward Voltage

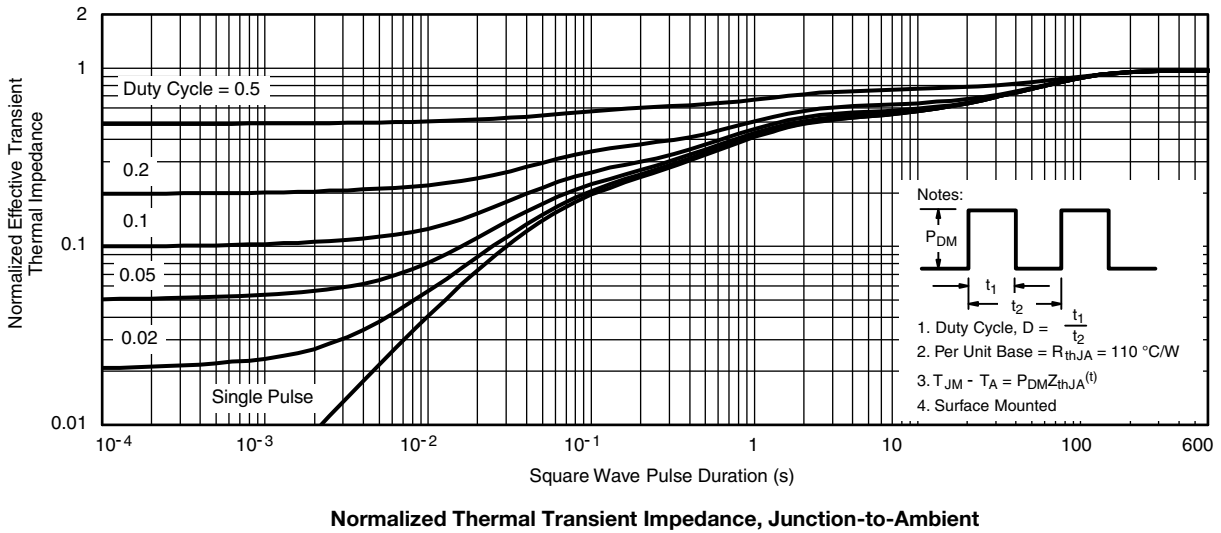
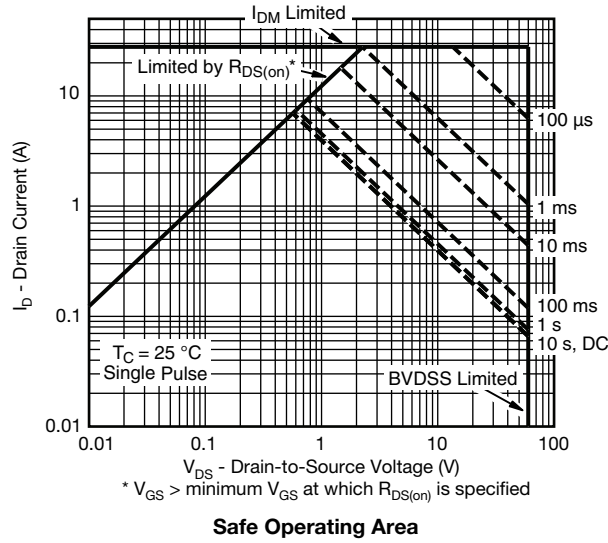


On-Resistance vs. Gate-to-Source Voltage

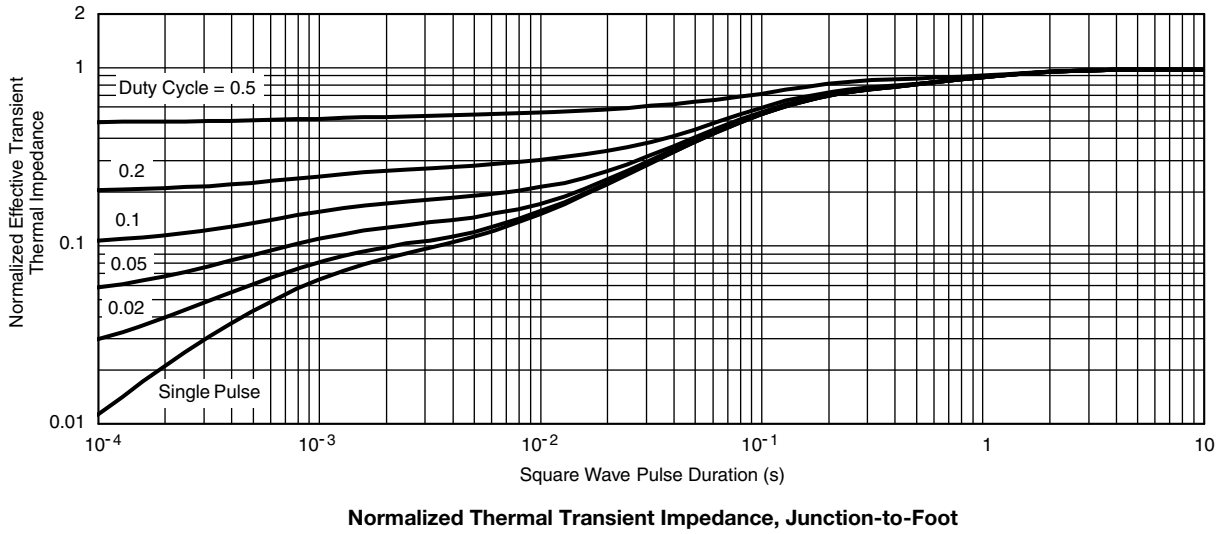


Threshold Voltage

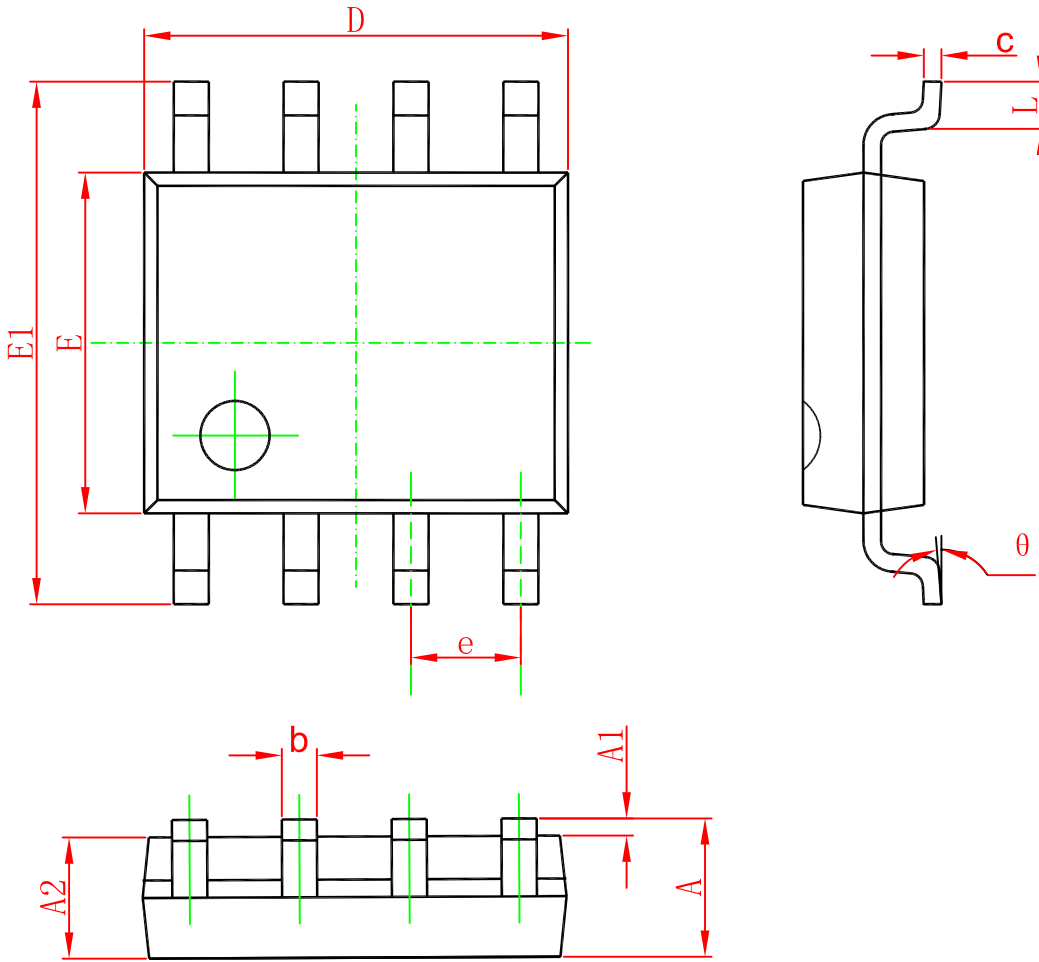
THERMAL RATINGS ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted)



THERMAL RATINGS ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted)

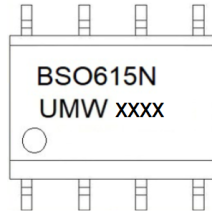


SOP-8



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
theta	0°	8°	0°	8°

Marking



Order code	Package	Baseqty	Deliverymode
UMW BSO615NG	SOP-8	3000	Tape and reel