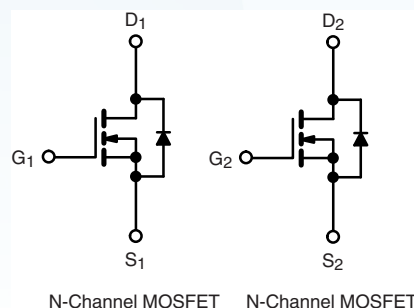


Dual N-Channel 60 V (D-S) MOSFET

Features

- TrenchFET® power MOSFET
- 100 % R_g and UIS tested

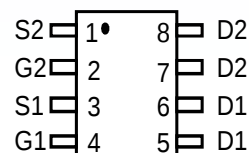


N-Channel MOSFET N-Channel MOSFET

Product Summary

V_{DS}	60V
I_D (at $V_{GS}=10V$)	7A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	< 19mΩ
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	< 23mΩ

Top View



ABSOLUTE MAXIMUM RATINGS (T _C = 25 °C, unless otherwise noted)				
PARAMETER		SYMBOL	LIMIT	UNIT
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	T _C = 25 °C	I_D	7	A
	T _C = 125 °C		4	
Continuous Source Current (Diode Conduction) ^a		I_S	3.6	
Pulsed Drain Current ^b		I_{DM}	28	
Single Pulse Avalanche Current	L = 0.1 mH	I_{AS}	18	mJ
Single Pulse Avalanche Energy		E_{AS}	16.2	
Maximum Power Dissipation ^b	T _C = 25 °C	P_D	4	W
	T _C = 125 °C		1.3	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to +175	°C

THERMAL RESISTANCE RATING S				
PARAMETER		SYMBOL	LIMIT	UNIT
Junction-to-Ambient	PCB Mount ^c	R_{thJA}	110	°C/W
Junction-to-Foot (Drain)		R_{thJF}	34	

Notes

- Package limited.
- Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2 %.
- When mounted on 1" square PCB (FR4 material).

Dual N-Channel 60 V (D-S) MOSFET

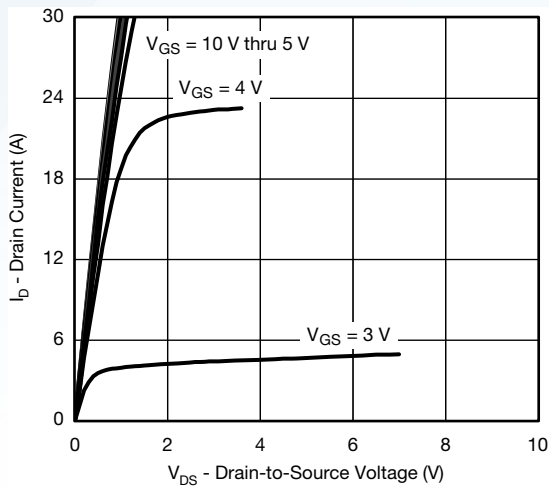
SPECIFICATIONS (T _C = 25 °C, unless otherwise noted)							
PARAMETER	SYMBOL	TEST CONDITIONS		MIN.	TYP.	MAX.	UNIT
Static							
Drain-Source Breakdown Voltage	V _{DS}	V _{GS} = 0 V, I _D = 250 μA		60	-	-	V
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA		1.5	2.0	2.5	
Gate-Source 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-		19	21	mΩ
		V _{GS} = 4.5 V	I _D = 4 A-		23	25	
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

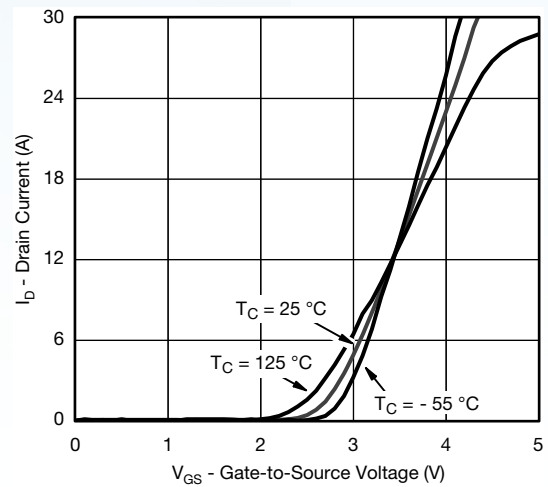
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2 %.
- b. Guaranteed by design, not subject to production testing.
- c. Independent of operating temperature.

Dual N-Channel 60 V (D-S) MOSFET

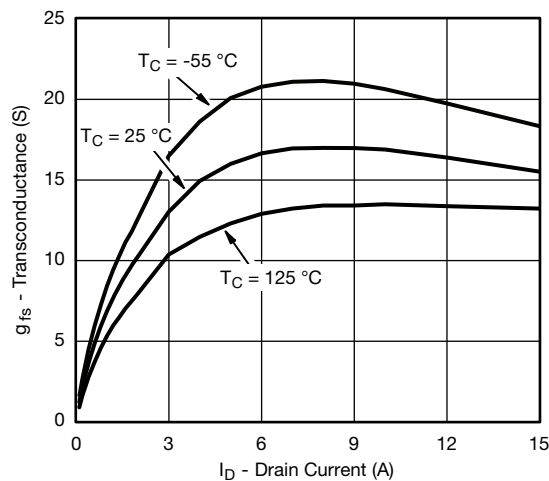
TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise noted)



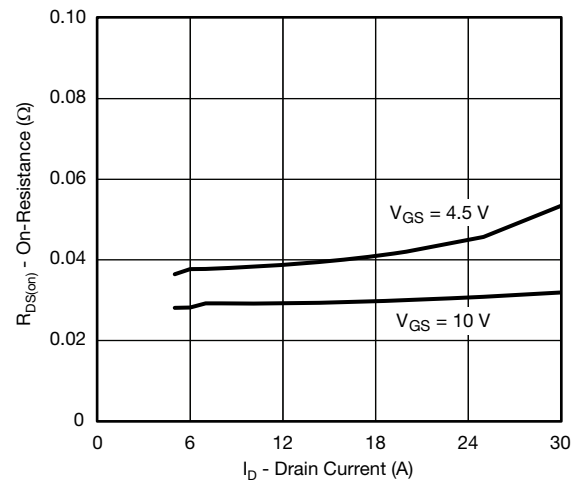
Output Characteristics



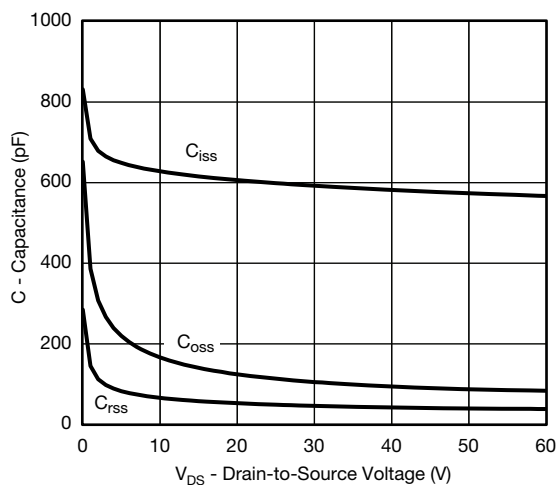
Transfer Characteristics



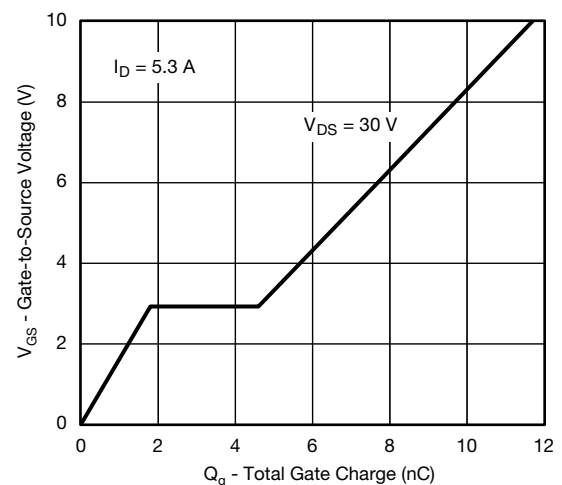
Transconductance



On-Resistance vs. Drain Current



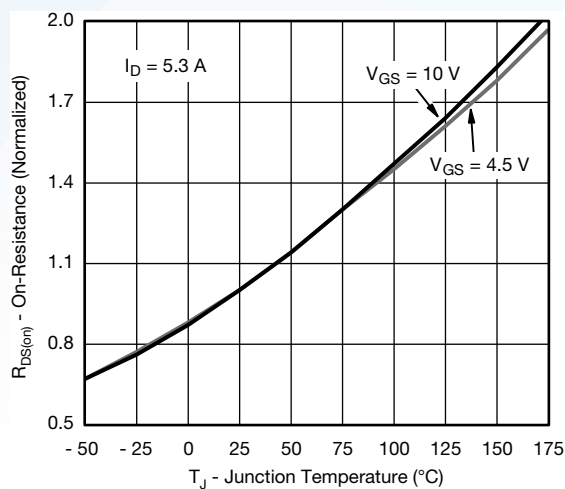
Capacitance



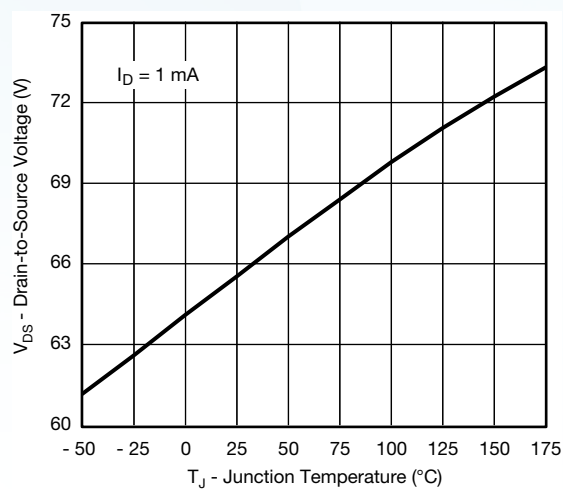
Gate Charge

Dual N-Channel 60 V (D-S) MOSFET

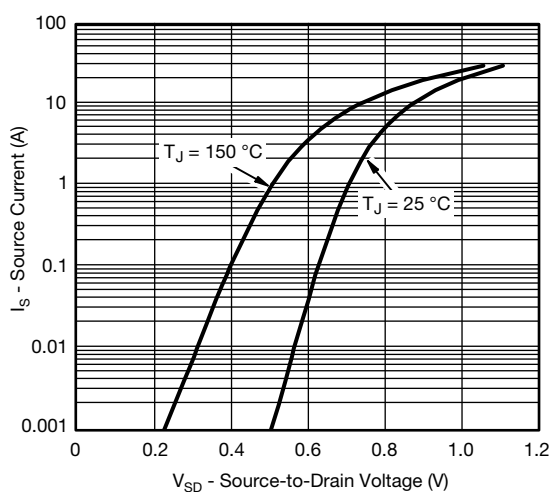
TYPICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise noted)



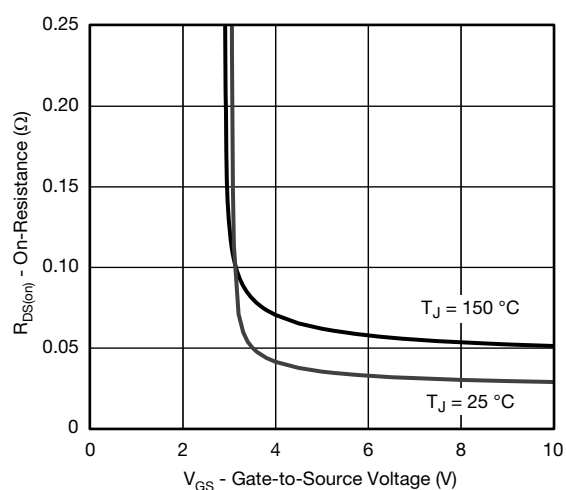
On-Resistance vs. Junction Temperature



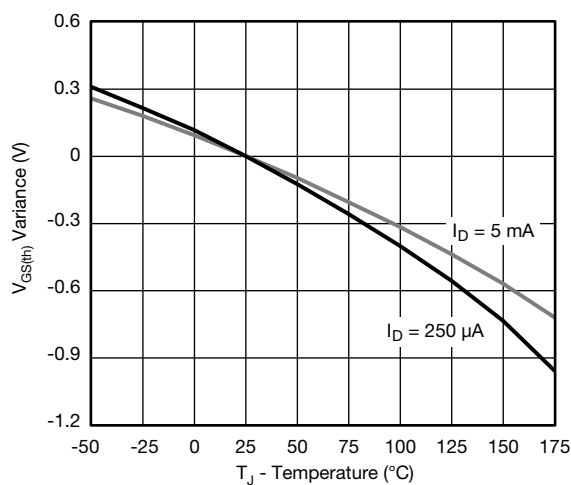
Drain Source Breakdown vs. Junction Temperature



Source Drain Diode Forward Voltage



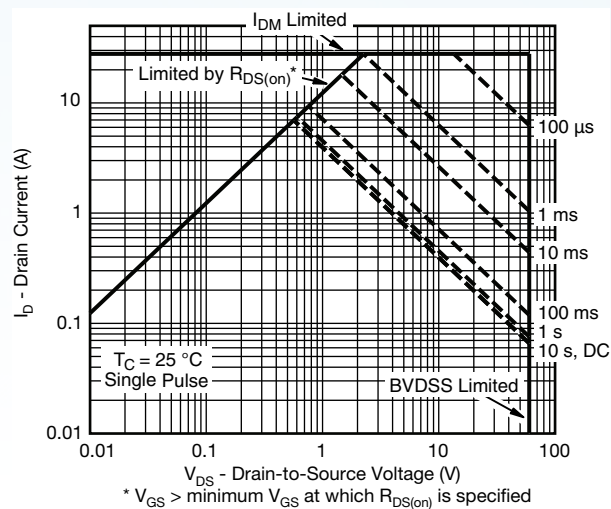
On-Resistance vs. Gate-to-Source Voltage



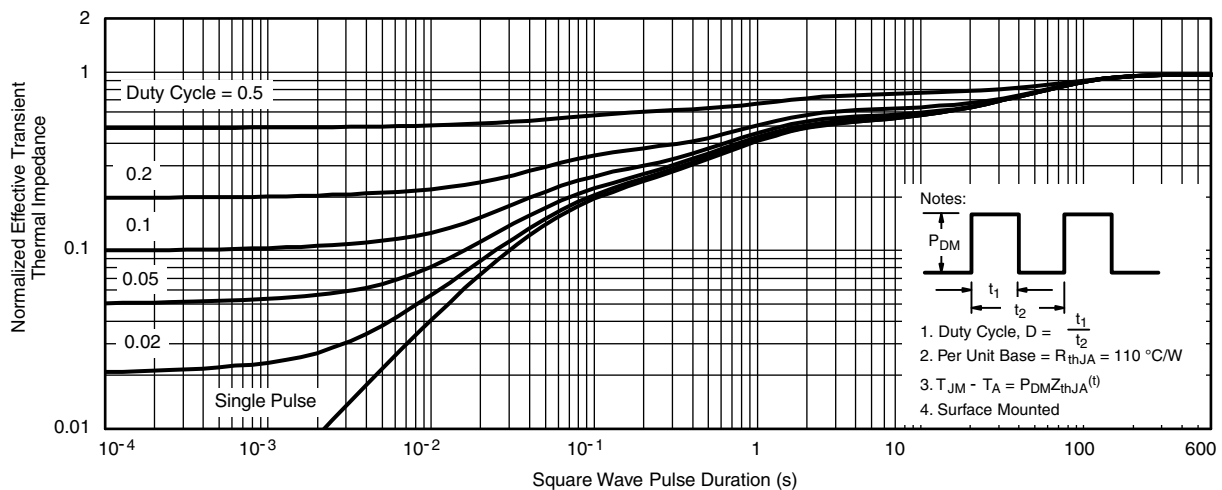
Threshold Voltage

Dual N-Channel 60 V (D-S) MOSFET

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

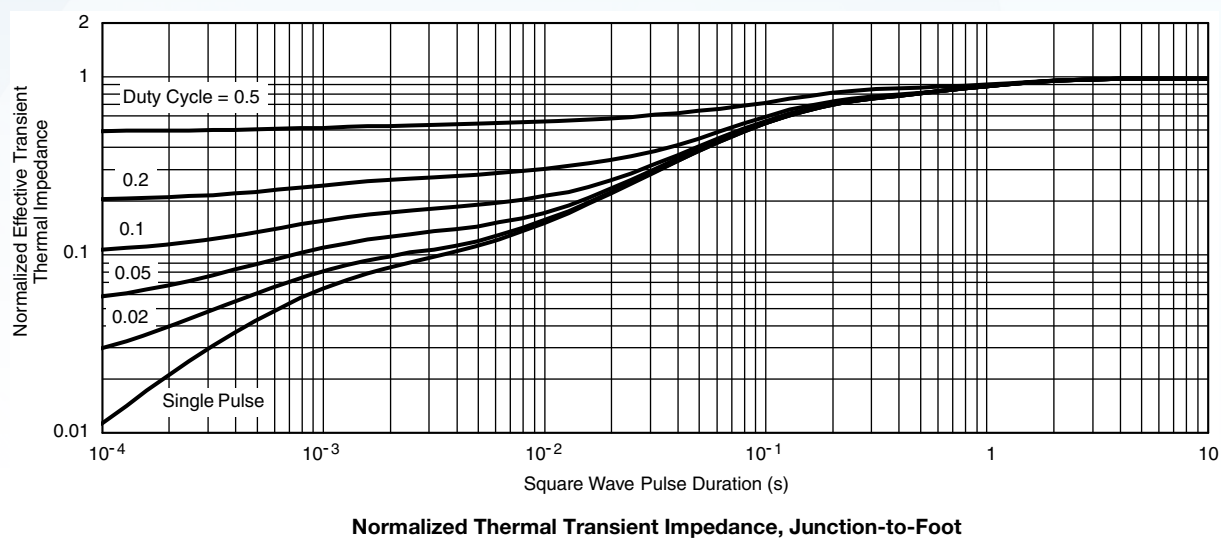


Safe Operating Area



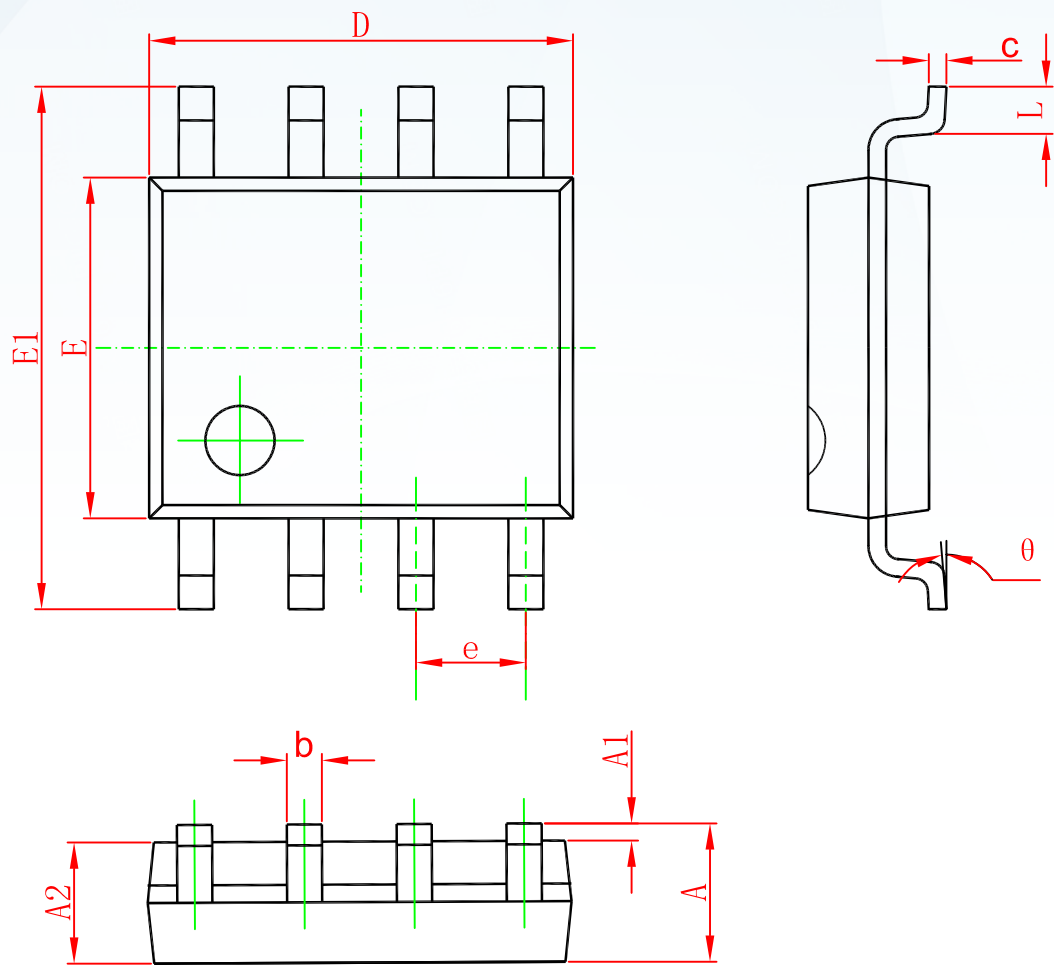
Normalized Thermal Transient Impedance, Junction-to-Ambient

Dual N-Channel 60 V (D-S) MOSFET

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

Dual N-Channel 60 V (D-S) MOSFET

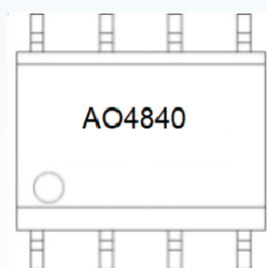
SOP-8



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
θ	0°	8°	0°	8°

Dual N-Channel 60 V (D-S) MOSFET

Marking



Ordering information

Order code	Package	Baseqty	Deliverymode
AO4840	SOP-8	3000	Tape and reel

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