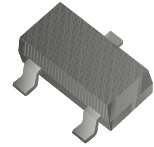


P-Channel MOSFET

RoHS Device
Halogen Free



Features

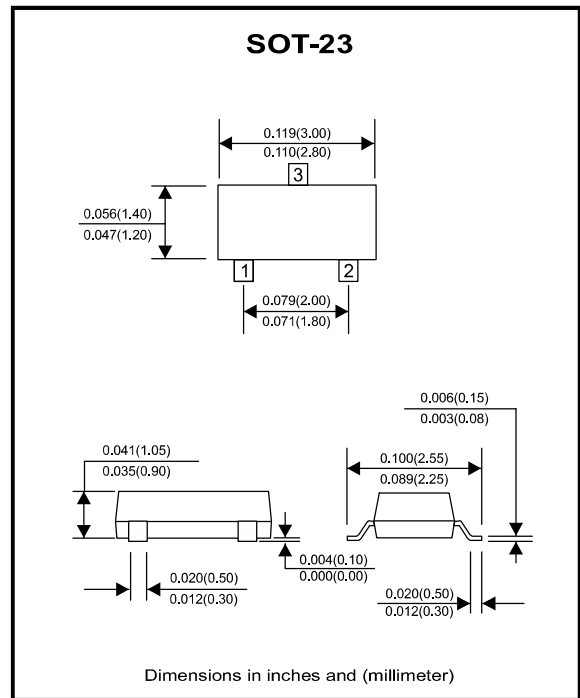
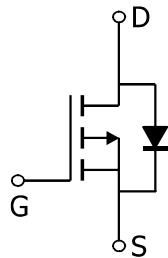
- $V_{DS} = -30V$, $I_D = -4.1A$
- $R_{DS(ON)} < 60m\Omega$ @ $V_{GS} = -10V$
 $R_{DS(ON)} < 85m\Omega$ @ $V_{GS} = -4.5V$
- High Speed Switching
- High Density Cell Design for Low $R_{DS(ON)}$
- Surface Mount Package

Application

- Battery Protection
- Load Switch
- Power Management

Circuit Diagram

- G : Gate
- S : Source
- D : Drain

Absolute Maximum Ratings ($T_C = 25^\circ C$ unless otherwise specified)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain-Source Voltage		-30	V
V_{GSS}	Gate-Source Voltage		± 20	V
I_D	Continuous Drain Current	$T_C = 25^\circ C$	-4.1	A
		$T_C = 100^\circ C$	-2.7	
I_{DM}	Pulsed Drain Current ^{note1}		-16.4	A
P_D	Power Dissipation	$T_C = 25^\circ C$	1.67	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		75	$^\circ C/W$
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	$^\circ C$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V,I _D = -250μA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -30V, V _{GS} = 0V,	-	-	-1	μA
I _{GSS}	Gate to Body Leakage Current	V _{DS} =0V, V _{GS} = ±20V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = -250μA	-1.0	-1.4	-2.5	V
R _{DS(on)}	Static Drain-Source on-Resistance note2	V _{GS} =-10V, I _D =-4.1A	-	48	60	mΩ
		V _{GS} =-4.5V, I _D =-3.5A	-	62	85	
g _{FS}	Forward Transconductance	V _{DS} =-5V, I _D = -4.1A	5	-	-	S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} = -15V, V _{GS} = 0V, f = 1.0MHz	-	580	-	pF
C _{oss}	Output Capacitance		-	98	-	pF
C _{rss}	Reverse Transfer Capacitance		-	74	-	pF
Q _g	Total Gate Charge	V _{DS} = -15V, I _D = -4.1A, V _{GS} = -10V	-	6.8	-	nC
Q _{gs}	Gate-Source Charge		-	1.0	-	nC
Q _{gd}	Gate-Drain(“Miller”) Charge		-	1.4	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DD} = -15V, I _D = -1A, R _{GEN} =2.5Ω,V _{GS} =-10V, R _L =15Ω	-	14	-	ns
t _r	Turn-on Rise Time		-	61	-	ns
t _{d(off)}	Turn-off Delay Time		-	19	-	ns
t _f	Turn-off Fall Time		-	10	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	-4.1	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	-16.4	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} = 0V, I _S = -4.1A	-	-0.89	-1.2	V

Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

Typical Performance Characteristics

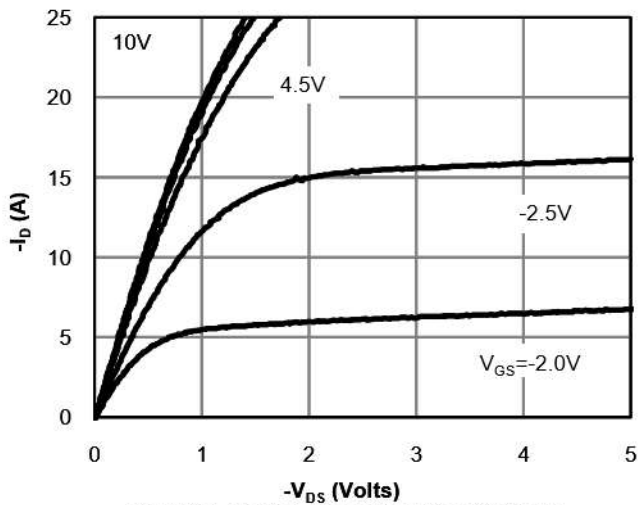


Figure 1: On-Region Characteristics (Note E)

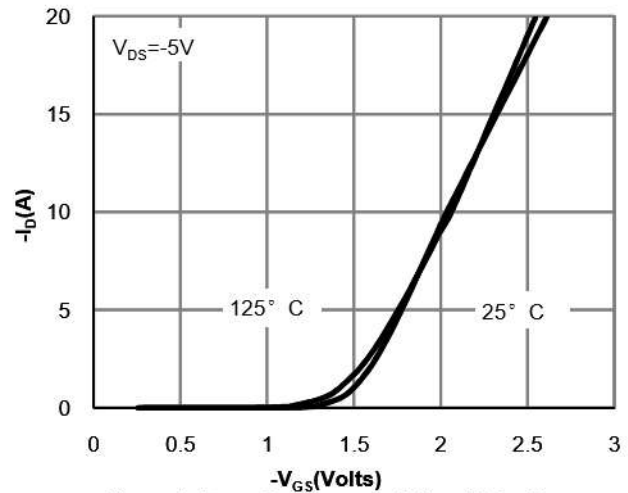


Figure 2: Transfer Characteristics (Note E)

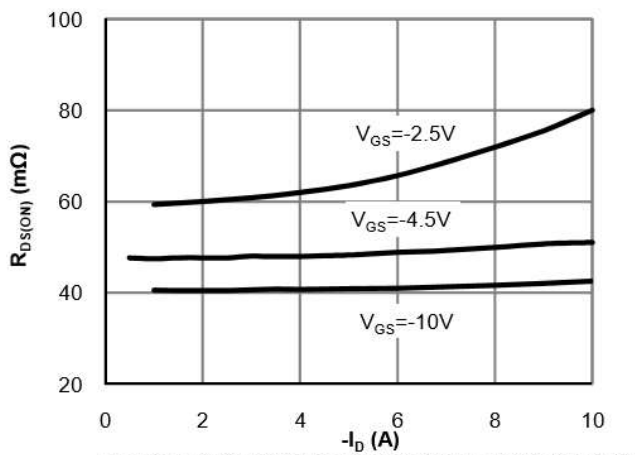


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

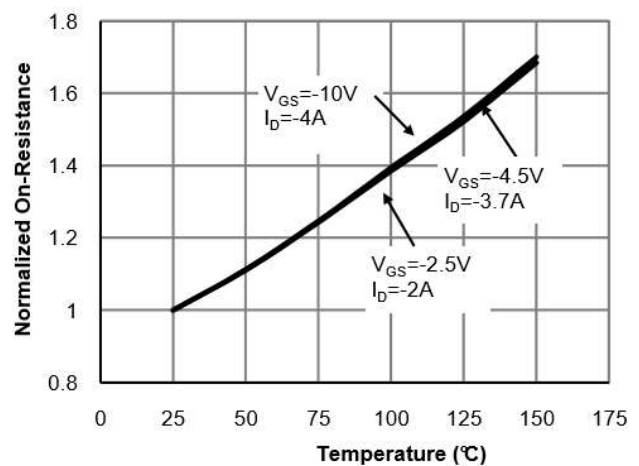


Figure 4: On-Resistance vs. Junction Temperature (Note E)

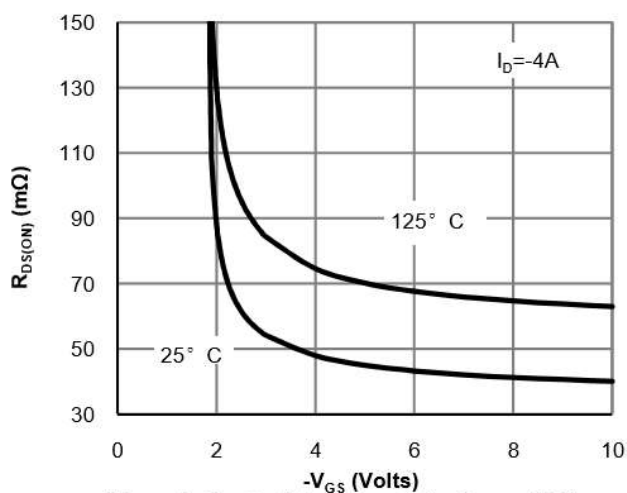


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

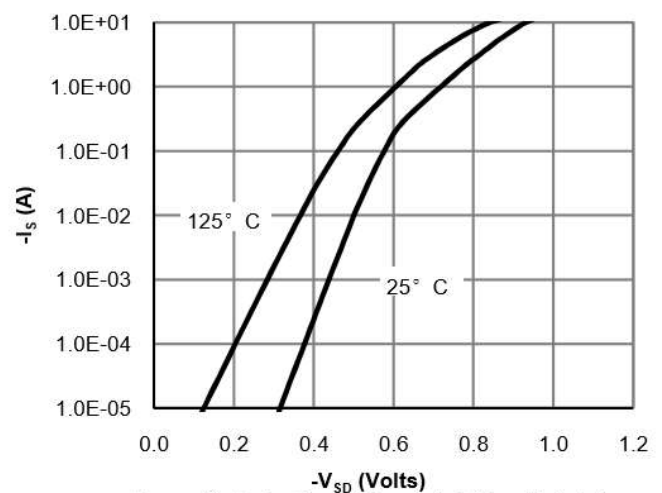
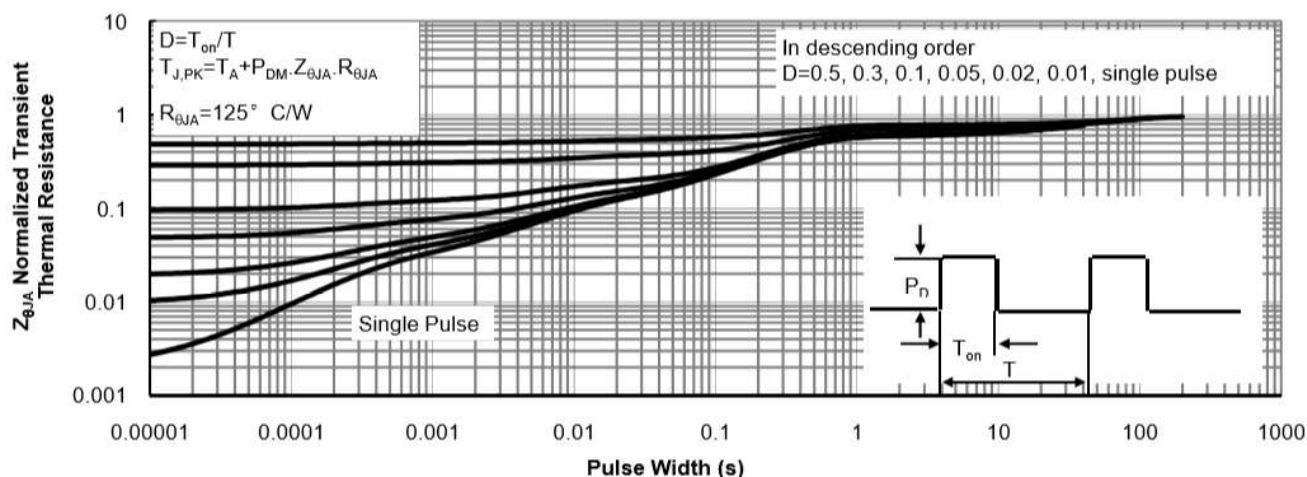
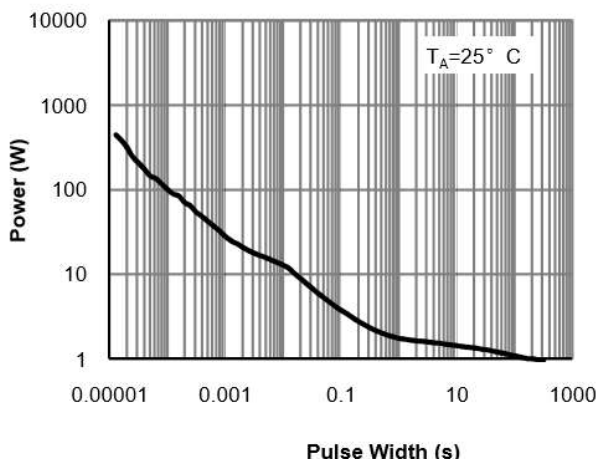
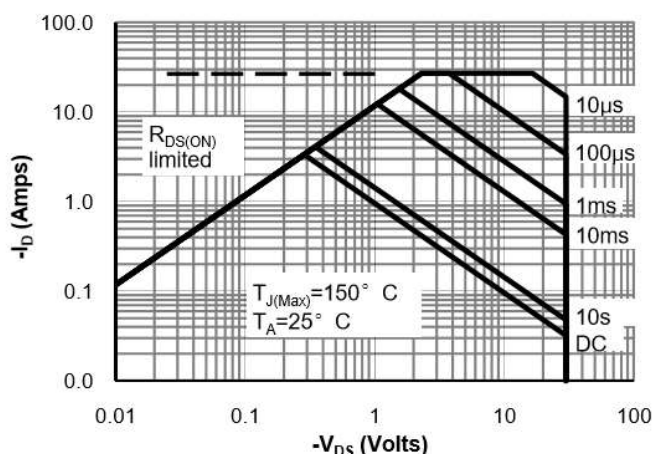
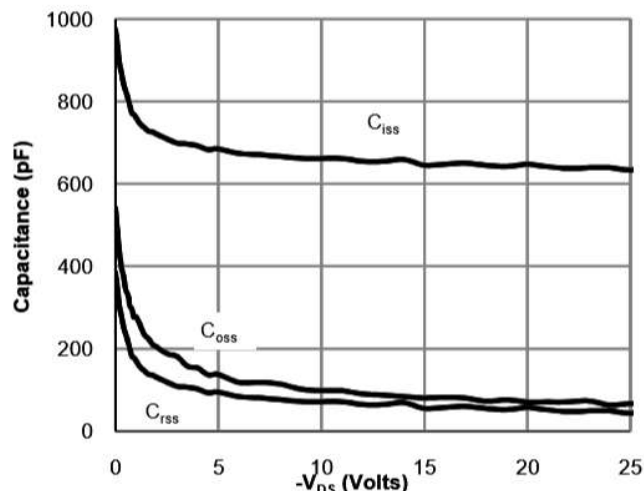
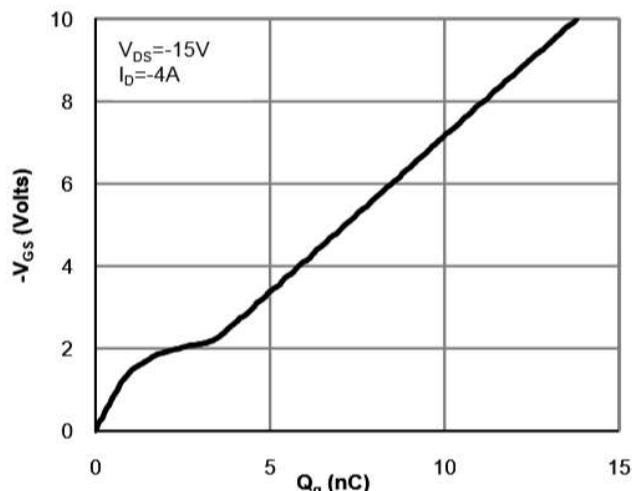


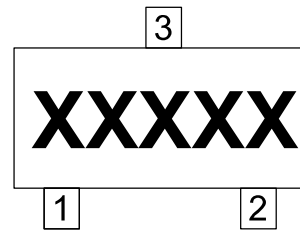
Figure 6: Body-Diode Characteristics (Note E)

Typical Performance Characteristics



Marking Code

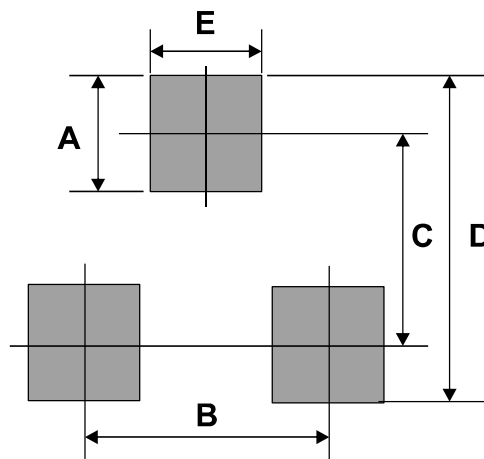
Part Number	Marking Code
LM3407A	3407A



xxxxx = Product type marking code

Suggested PAD Layout

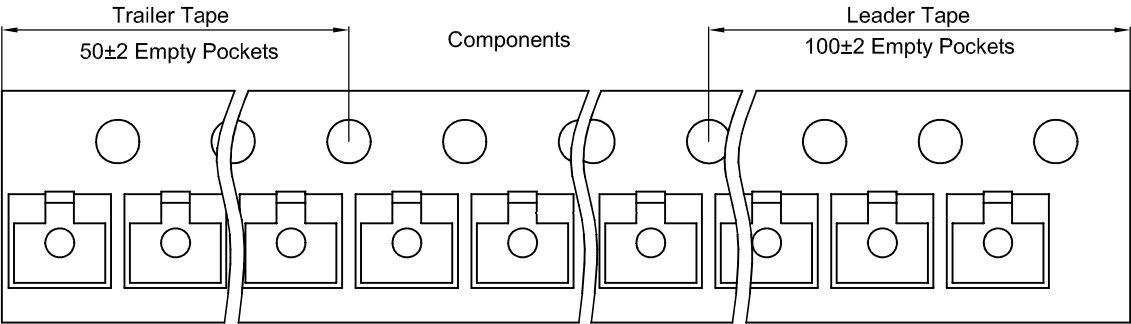
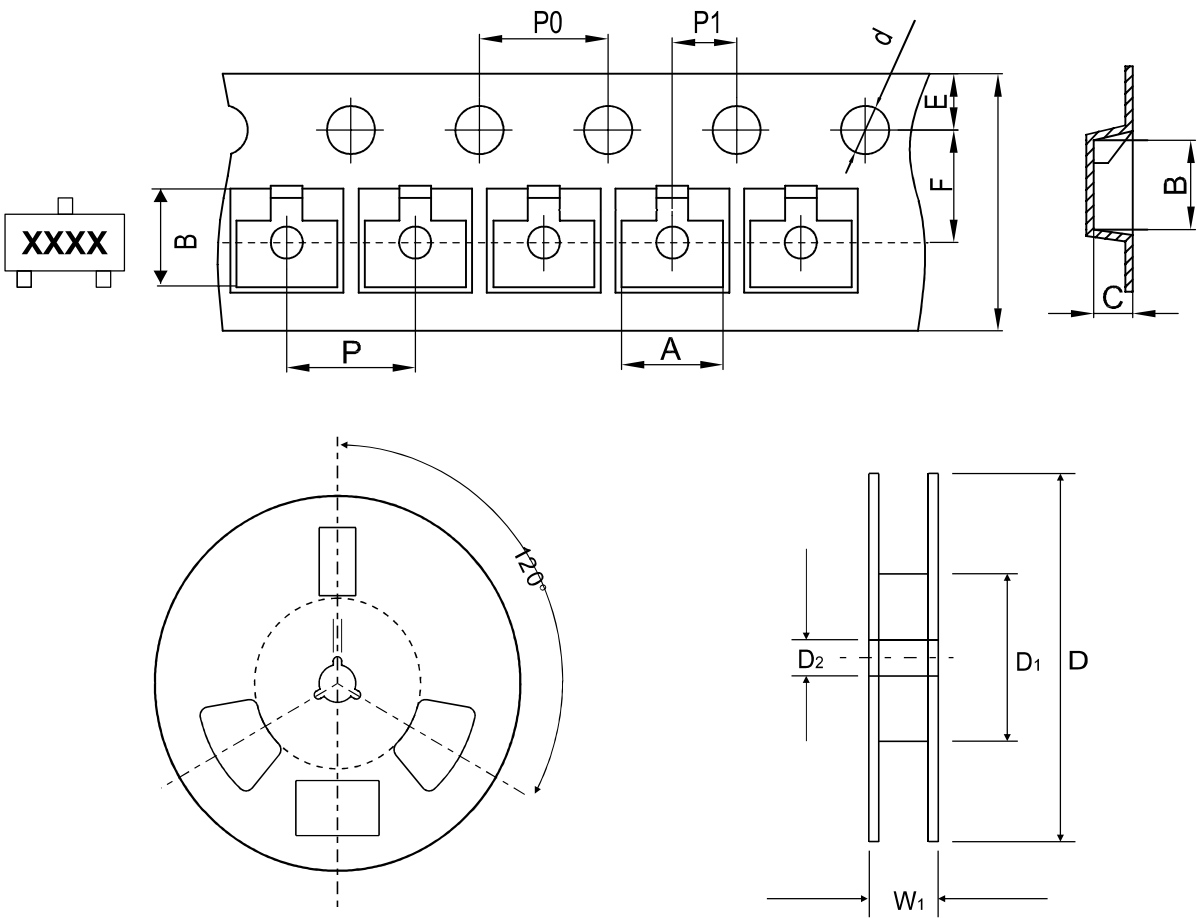
SIZE	SOT-23	
	(mm)	(inch)
A	0.80	0.031
B	1.90	0.075
C	2.02	0.080
D	2.82	0.111
E	0.60	0.024



Standard Packaging

Case Type	Qty Per Reel	Reel Size
	(Pcs)	(inch)
SOT-23	3,000	7

Reel Taping Specification



SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 + 0.30 / - 0.10	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.315 + 0.012 / - 0.004	0.484 ± 0.039

Company reserves the right to improve product design , functions and reliability without notice.