

GSM4435

30V P-Channel Enhancement Mode MOSFET

Product Description

GSM4435, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge. These devices are particularly suited for low voltage power management, and low in-line power loss are needed in commercial industrial surface mount applications.

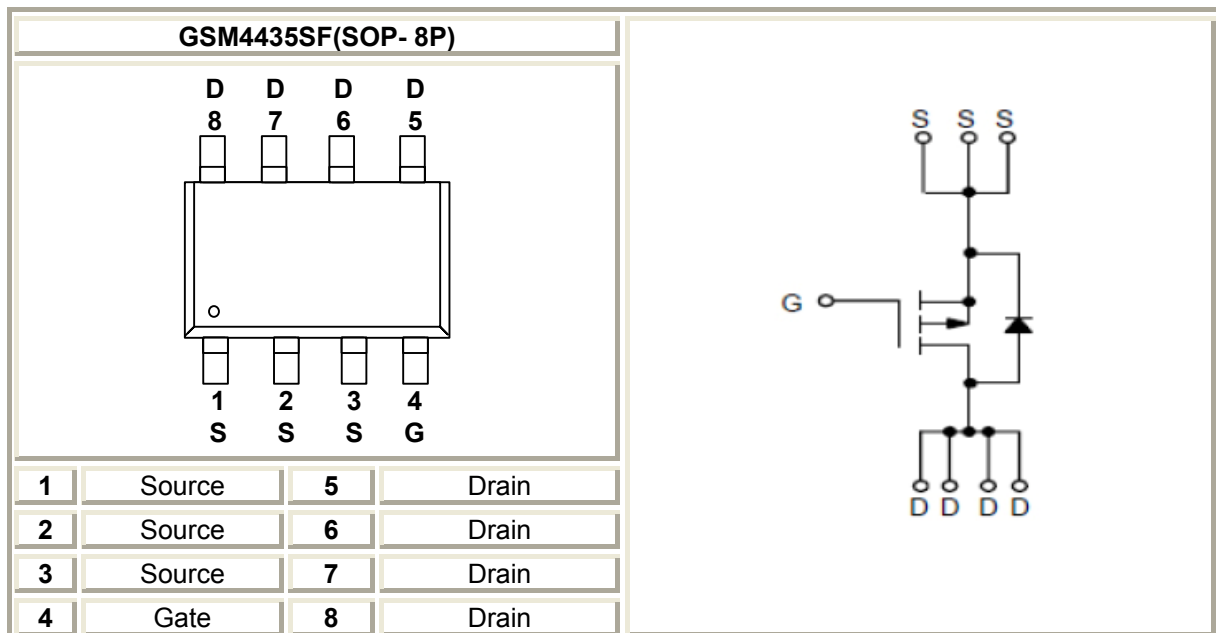
Features

- -30V/-10A, $R_{DS(ON)} = 28m\Omega @ V_{GS} = -10V$
- -30V/-7.0A, $R_{DS(ON)} = 37m\Omega @ V_{GS} = -4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- SOP-8P package design

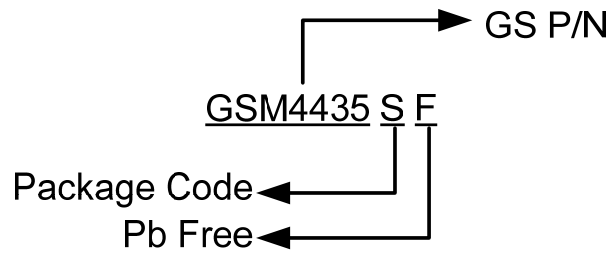
Applications

- LED Display
- Load Switch
- CCFL Inverter
- Power Management in Notebook Computer

Packages & Pin Assignments

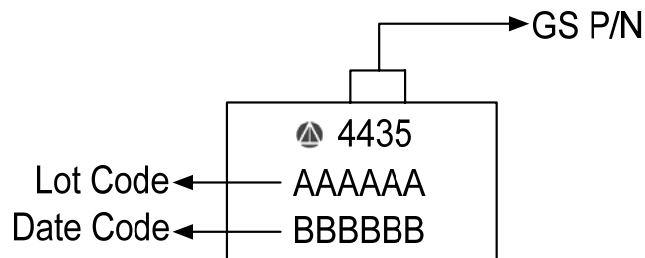


Ordering Information



Part Number	Package	Quantity Reel
GSM4435SF	SOP-8P	3000 PCS

Marking Information



Absolute Maximum Ratings

TA=25°C Unless otherwise noted

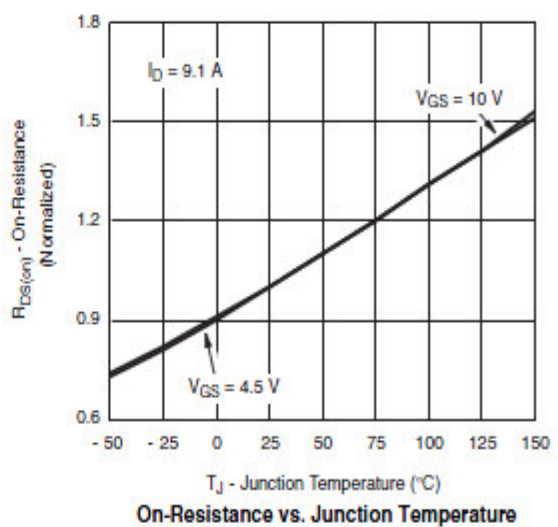
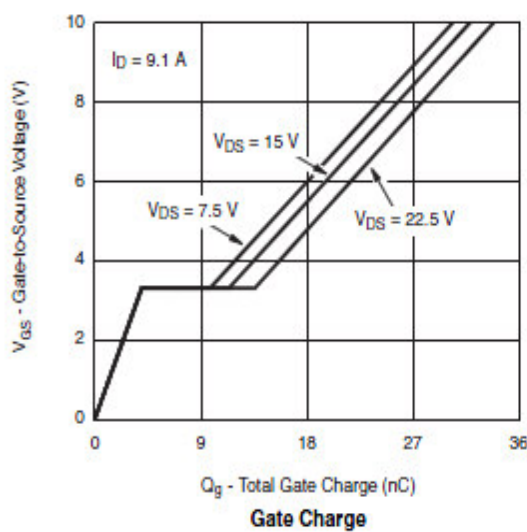
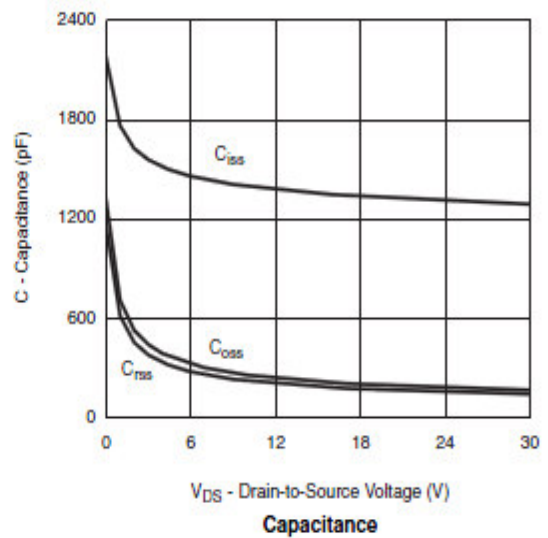
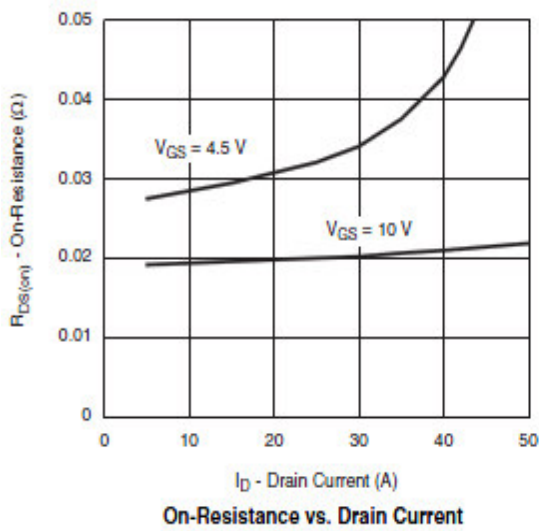
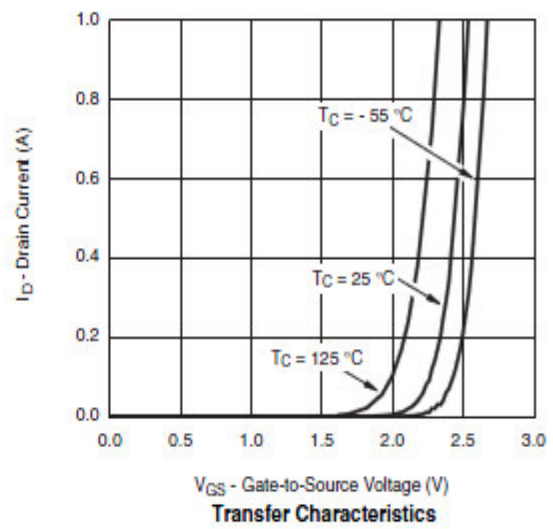
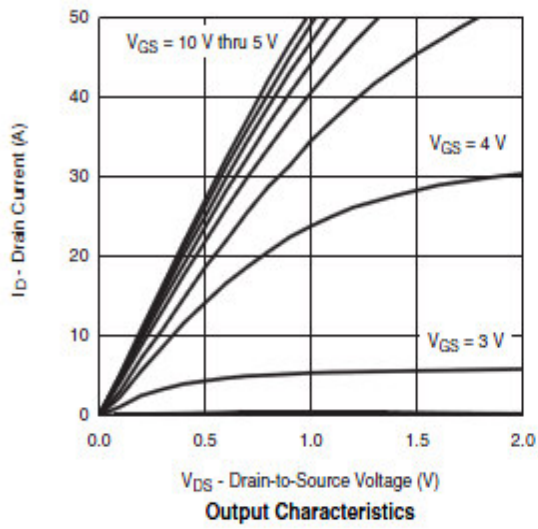
Symbol	Parameter	Typical	Unit	
V _{DSS}	Drain-Source Voltage	-30	V	
V _{GSS}	Gate -Source Voltage	±20	V	
I _D	Continuous Drain Current(T _J =150°C)	TA =25°C	-10.0	A
		TA =70°C	-7.0	
I _{DM}	Pulsed Drain Current	-40	A	
I _S	Continuous Source Current(Diode Conduction)	-2	A	
PD	Power Dissipation	TA =25°C	2.8	W
		TA =70°C	1.8	
T _J	Operating Junction Temperature	150	°C	
T _{STG}	Storage Temperature Range	-55/150	°C	
R _{θJA}	Thermal Resistance-Junction to Ambient	62.5	°C/W	

Electrical Characteristics

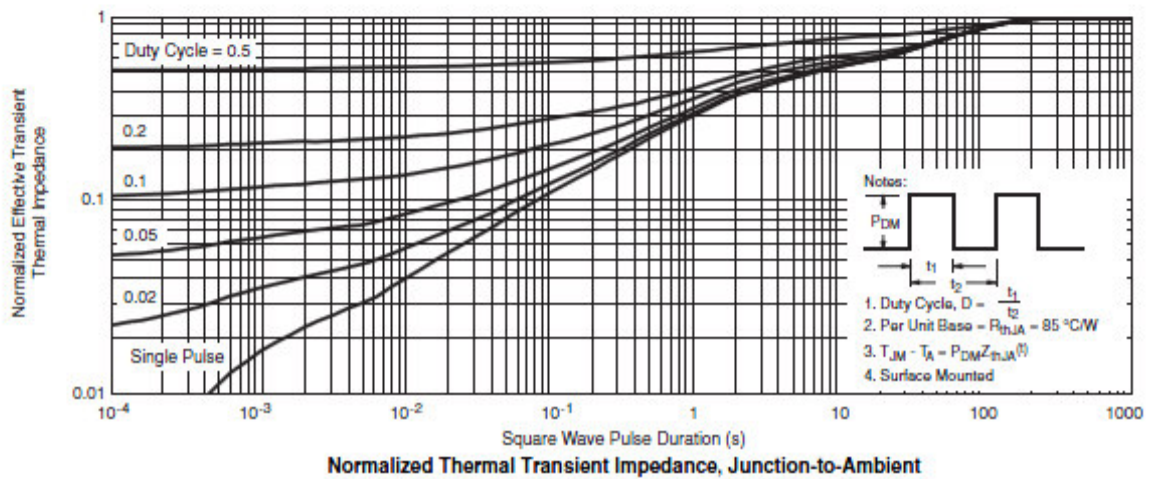
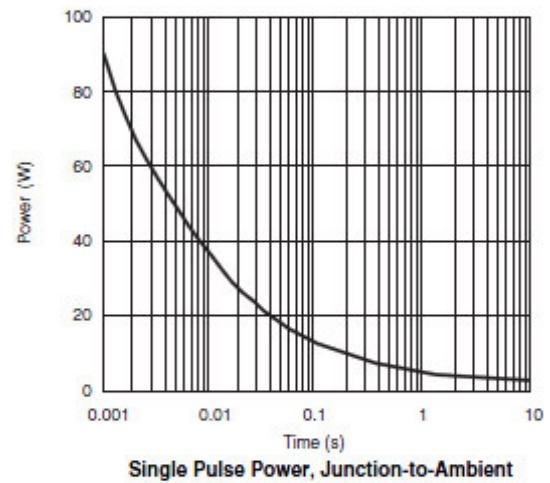
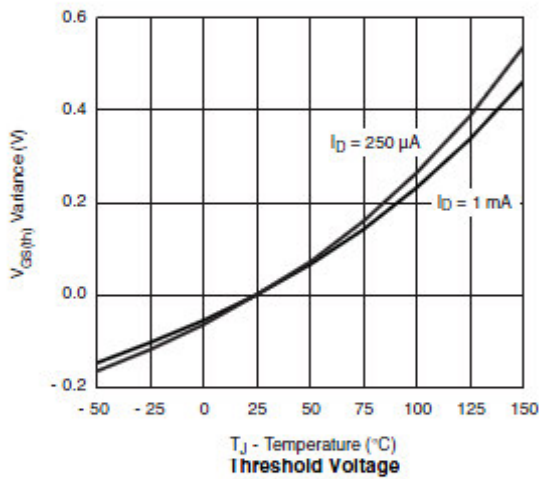
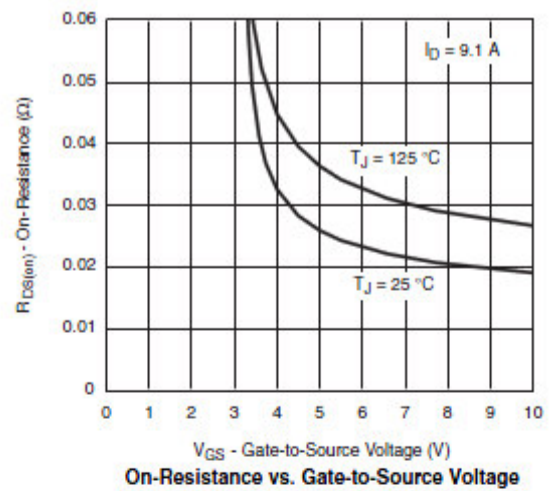
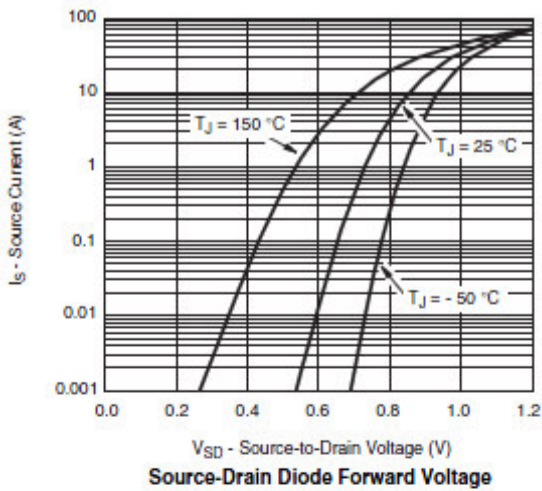
TA=25°C Unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = -250uA	-30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D = -250uA	-0.5		-1.8	
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} = ±12V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -24V, V _{GS} =0V			-1	uA
		V _{DS} = -24V, V _{GS} =0V, T _J =85°C			-30	
I _{D(on)}	On-State Drain Current	V _{DS} ≤-10V, V _{GS} =-10V	-30			A
		V _{DS} ≤-5V, V _{GS} =-4.5V	-5			
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} = -10V, I _D = -10A		0.024	0.028	Ω
		V _{GS} = -4.5V, I _D = -7.0A		0.030	0.037	
g _{fs}	Forward Transconductance	V _{DS} = -10V, I _D = -9.0A		22		S
V _{SD}	Diode Forward Voltage	I _S = -1.7A, V _{GS} =0V		-0.7	-1.3	V
Dynamic						
Q _g	Total Gate Charge	V _{DS} = -15V, V _{GS} = -4.5V, I _D = -6.0A		10	18	nC
Q _{gs}	Gate-Source Charge			1.6		
Q _{gd}	Gate-Drain Charge			3.0		
C _{iss}	Input Capacitance	V _{DS} = -15V, V _{GS} =0V, f=1MHz		950		pF
C _{oss}	Output Capacitance			200		
C _{rss}	Reverse Transfer Capacitance			175		
t _{d(on)}	Turn-On Time	V _{DD} = -15V, R _L =15Ω I _D =-5.0A, V _{GEN} = -10V R _G =6Ω		8	18	nS
t _r				8	18	
t _{d(off)}	Turn-Off Time			25	50	
t _f				25	35	

Typical Performance Characteristics

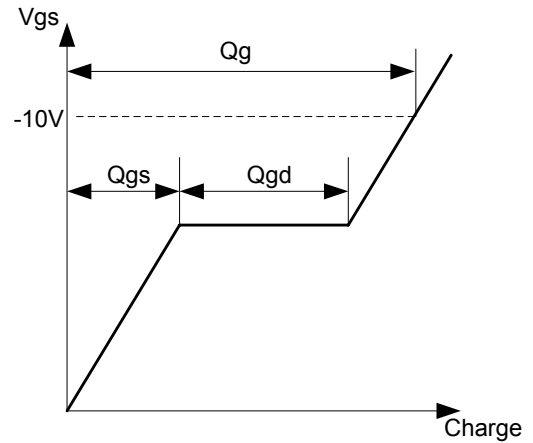
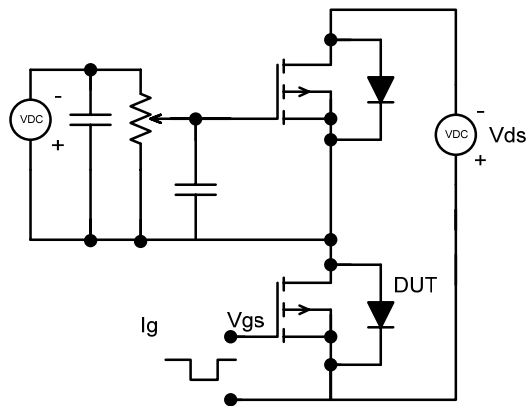


Typical Performance Characteristics(Continue)

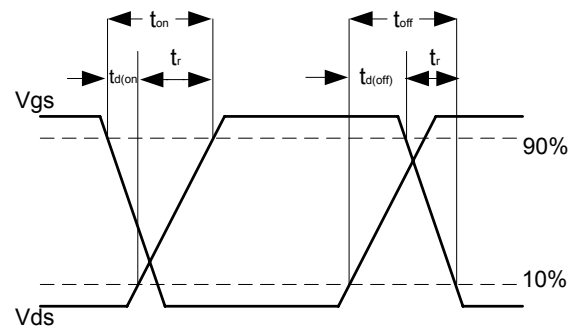
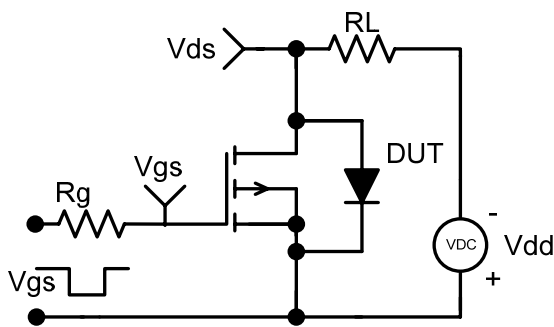


Typical Characteristics

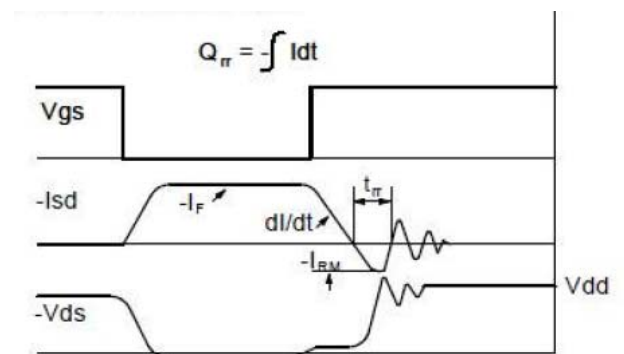
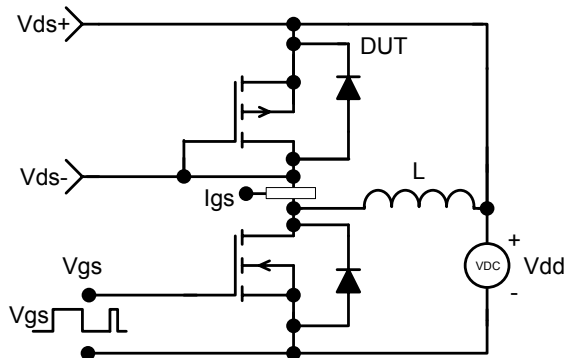
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

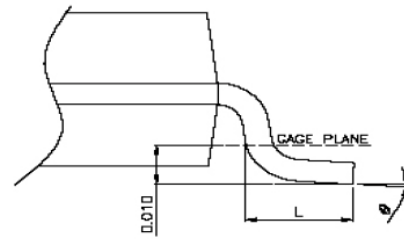
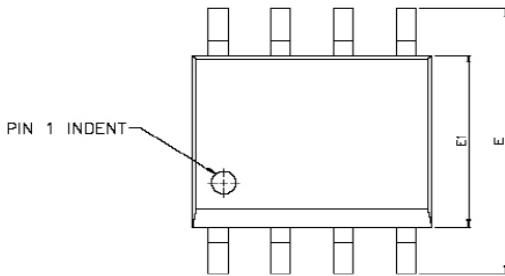


Diode Recovery Test Circuit & Waveforms

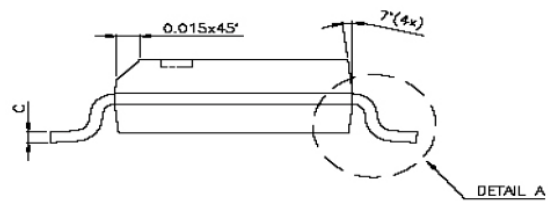
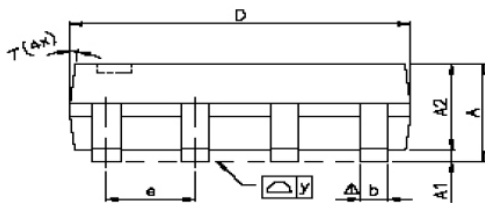


Package Dimension

SOP-8P



DETAIL A



DETAIL A





Dimensions

Symbol	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	1.47	1.60	1.73	0.058	0.063	0.068
A1	0.10	-	0.25	0.004	-	0.010
A2	-	1.45	-	-	0.057	-
b	0.33	0.41	0.51	0.013	0.016	0.020
C	0.19	0.20	0.25	0.0075	0.008	0.0098
D	4.80	4.85	4.95	0.189	0.191	0.195
E	5.80	6.00	6.20	0.228	0.236	0.244
E1	3.80	3.90	4.00	0.150	0.154	0.157
e	-	1.27	-	-	0.050	-
L	0.38	0.71	1.27	0.015	0.028	0.050
Δy	-	-	0.076	-	-	0.003
θ	0°	-	8°	0°	-	8°



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