



# SPN6338

## Dual N-Channel Enhancement Mode MOSFET

### DESCRIPTION

The SPN6338 is the Dual N-Channel enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology. This high density process is especially tailored to minimize on-state resistance and provide superior switching performance. These devices are particularly suited for low voltage applications such as notebook computer power management and other battery powered circuits where high-side switching , low in-line power loss, and resistance to transients are needed.

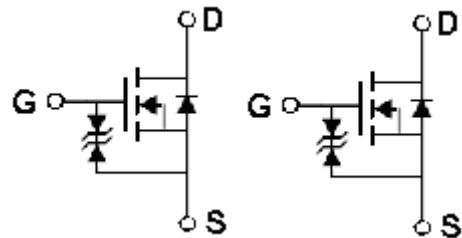
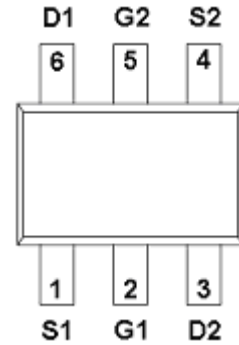
### FEATURES

- ◆ N-Channel  
30V/0.95A,  $R_{DS(ON)}=550m\Omega@V_{GS}=4.5V$   
30V/0.75A,  $R_{DS(ON)}=650m\Omega@V_{GS}=2.5V$   
30V/0.65A,  $R_{DS(ON)}=850m\Omega@V_{GS}=1.8V$
- ◆ Super high density cell design for extremely low  $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-363 (SC-70-6L) package design

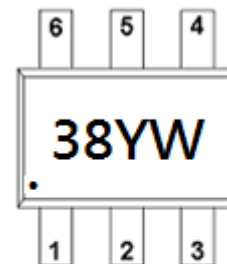
### APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

### PIN CONFIGURATION( SOT-363 / SC-70-6L)



### PART MARKING



Y : Year Code  
W : Week Code



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### PIN DESCRIPTION

Pin	Symbol	Description
1	S1	Source 1
2	G1	Gate 1
3	D2	Drain 2
4	S2	Source 2
5	G2	Gate 2
6	D1	Drain1

### ORDERING INFORMATION

Part Number	Package	Part Marking
SPN6338S36RGB	SOT-363	38YW

※ Week Code : A ~ Z( 1 ~ 26 ) ; a ~ z( 27 ~ 52 )

※ SPN6338S36RGB : Tape Reel ; Pb – Free ; Halogen – Free

### ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	VDSS	30	V
Gate –Source Voltage	VGSS	±12	V
Continuous Drain Current(TJ=150°C)	ID	TA=25°C	1.2
		TA=80°C	0.9
Pulsed Drain Current	IDM	4	A
Continuous Source Current(Diode Conduction)	IS	0.6	A
Power Dissipation	PD	TA=25°C	0.35
		TA=70°C	0.19
Operating Junction Temperature	TJ	-55/150	°C
Storage Temperature Range	TSTG	-55/150	°C



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### ELECTRICAL CHARACTERISTICS

(TA=25°C Unless otherwise noted)

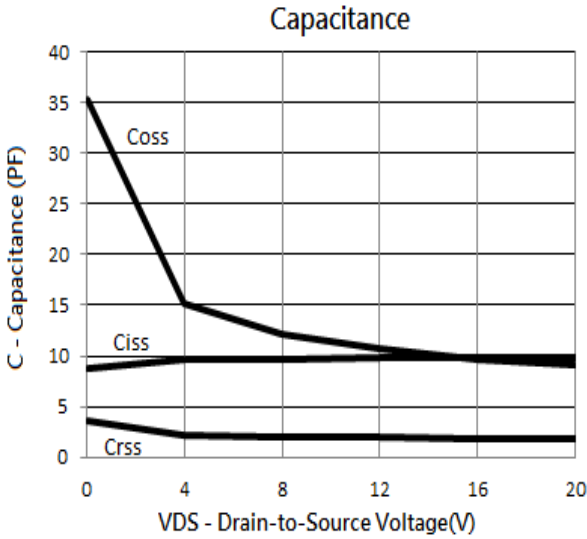
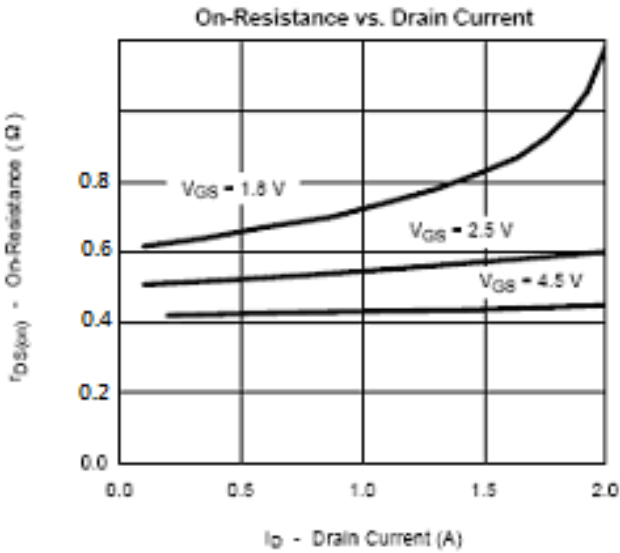
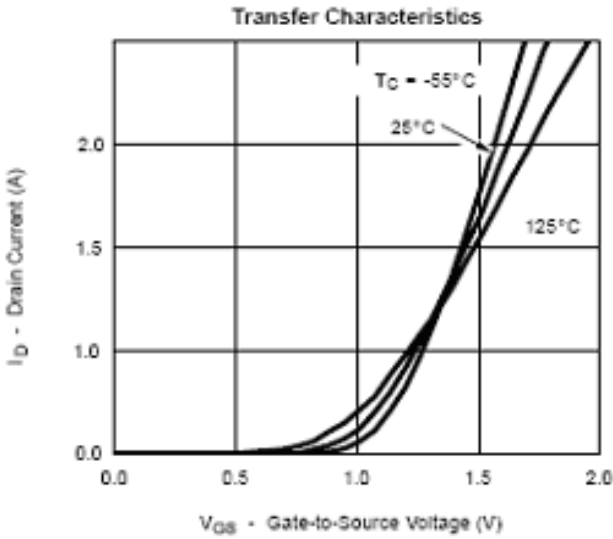
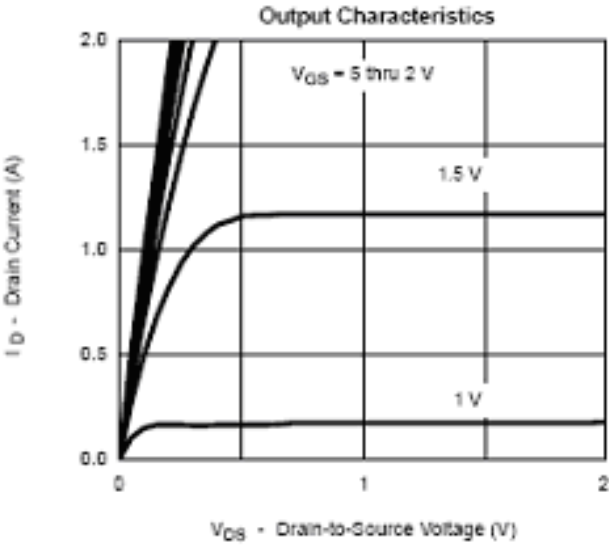
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> = 250uA	30			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	0.35		1.0	
Gate Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V			30	uA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 24V, V <sub>GS</sub> =0V			1	uA
		V <sub>DS</sub> = 24V, V <sub>GS</sub> =0V T <sub>J</sub> =55°C			5	
On-State Drain Current	I <sub>D(on)</sub>	V <sub>DS</sub> ≥ 4.5V, V <sub>GS</sub> =5V	0.7			A
Drain-Source On-Resistance	R <sub>DSS(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =0.95A		0.45	0.55	Ω
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =0.75A		0.50	0.65	
		V <sub>GS</sub> =1.8V, I <sub>D</sub> =0.65A		0.70	0.85	
Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =0.4A		1.0		S
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =0.15A, V <sub>GS</sub> =0V		0.8	1.2	V
<b>Dynamic</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =0.6A		1.2	1.5	nC
Gate-Source Charge	Q <sub>gs</sub>			0.2		
Gate-Drain Charge	Q <sub>gd</sub>			0.3		
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V f=1MHz		7.2		pF
Output Capacitance	C <sub>oss</sub>			17		
Reverse Transfer Capacitance	C <sub>rss</sub>			1.6		
Turn-On Time	t <sub>d(on)</sub>	V <sub>DD</sub> =10V, R <sub>L</sub> =10Ω , I <sub>D</sub> =0.5A V <sub>GEN</sub> =4.5V , R <sub>G</sub> =6Ω		5	10	ns
	t <sub>r</sub>			8	15	
Turn-Off Time	t <sub>d(off)</sub>			10	18	
	t <sub>f</sub>			1.2	2.8	



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### TYPICAL CHARACTERISTICS

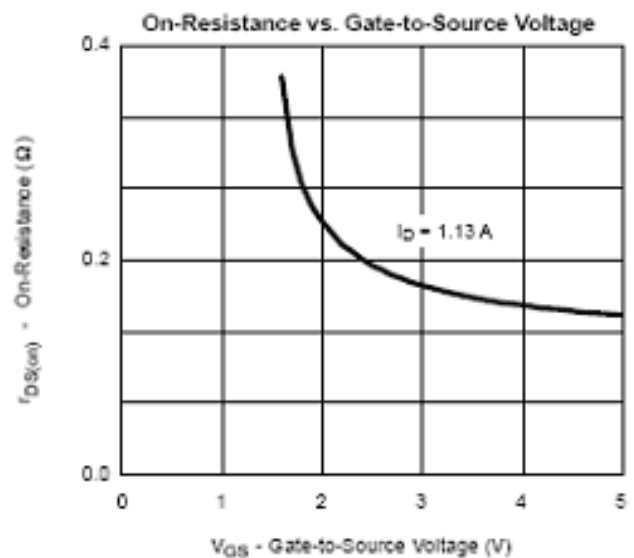
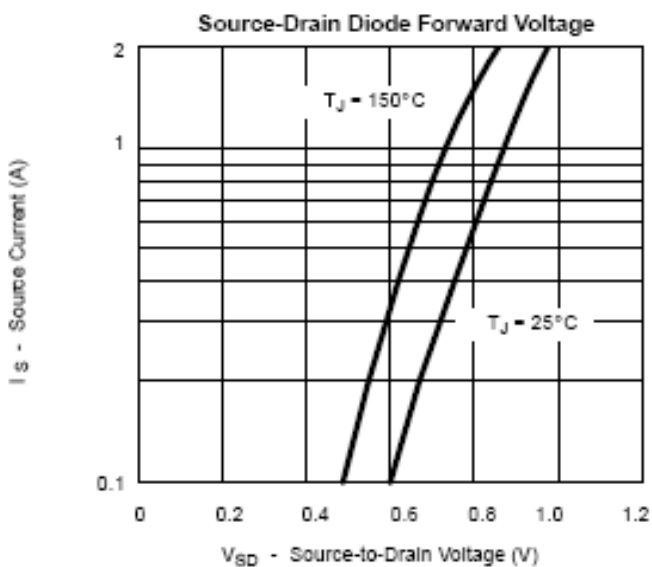
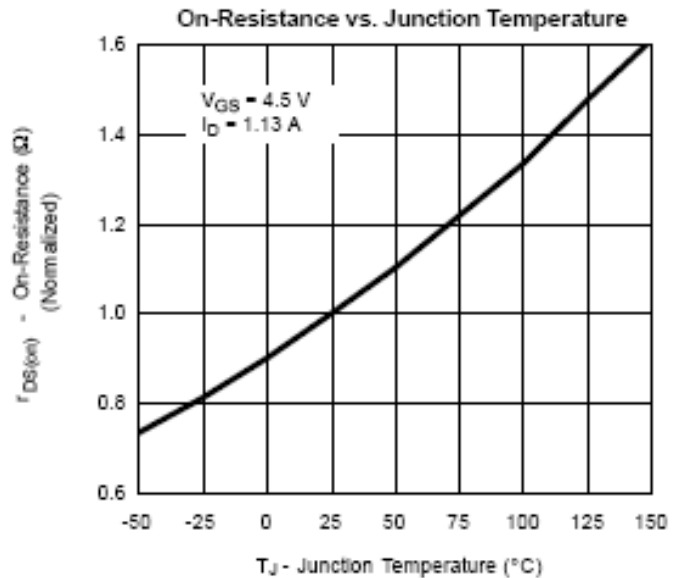
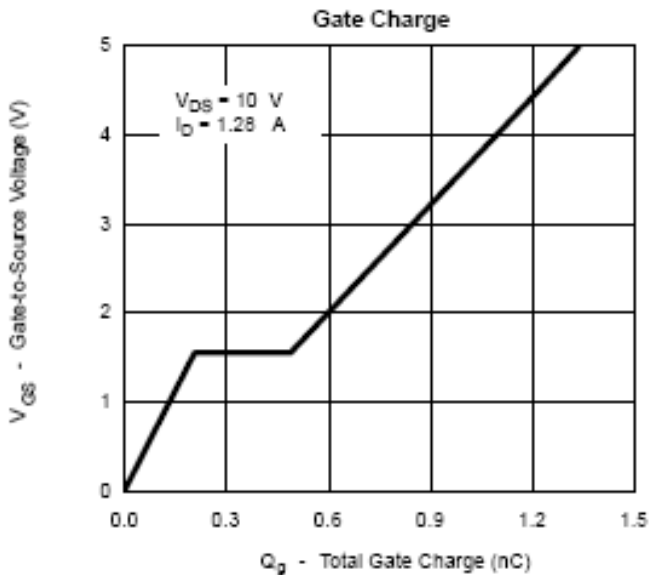




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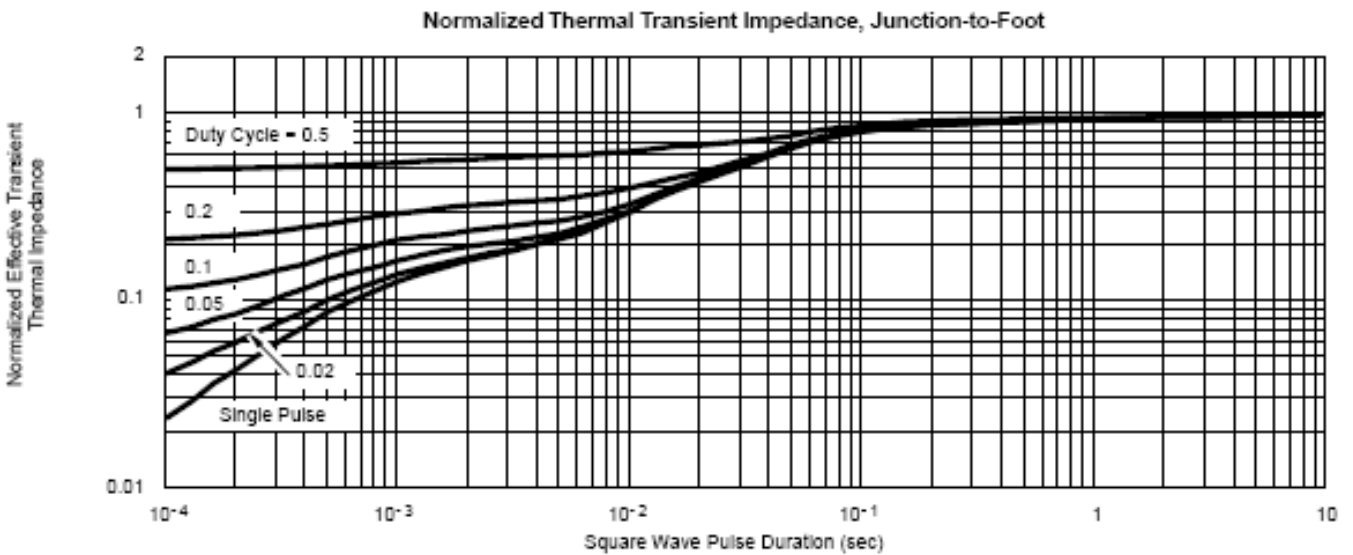
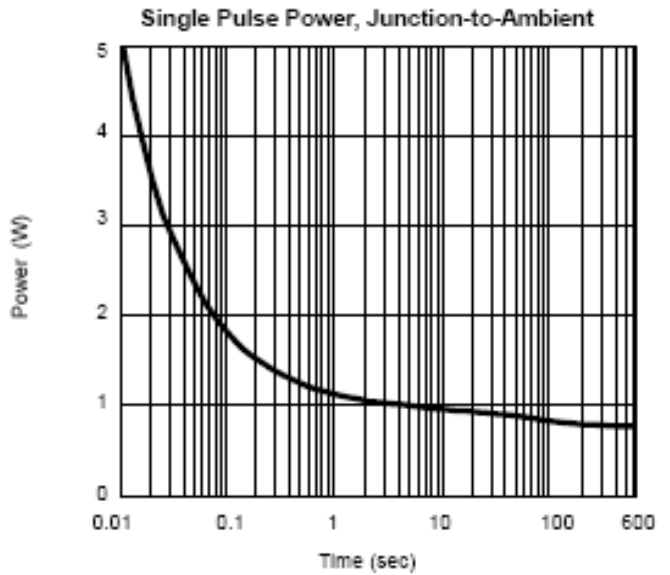
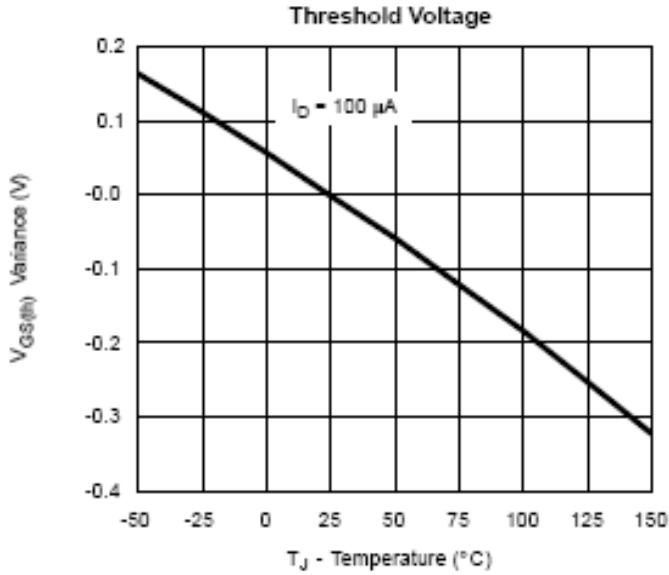




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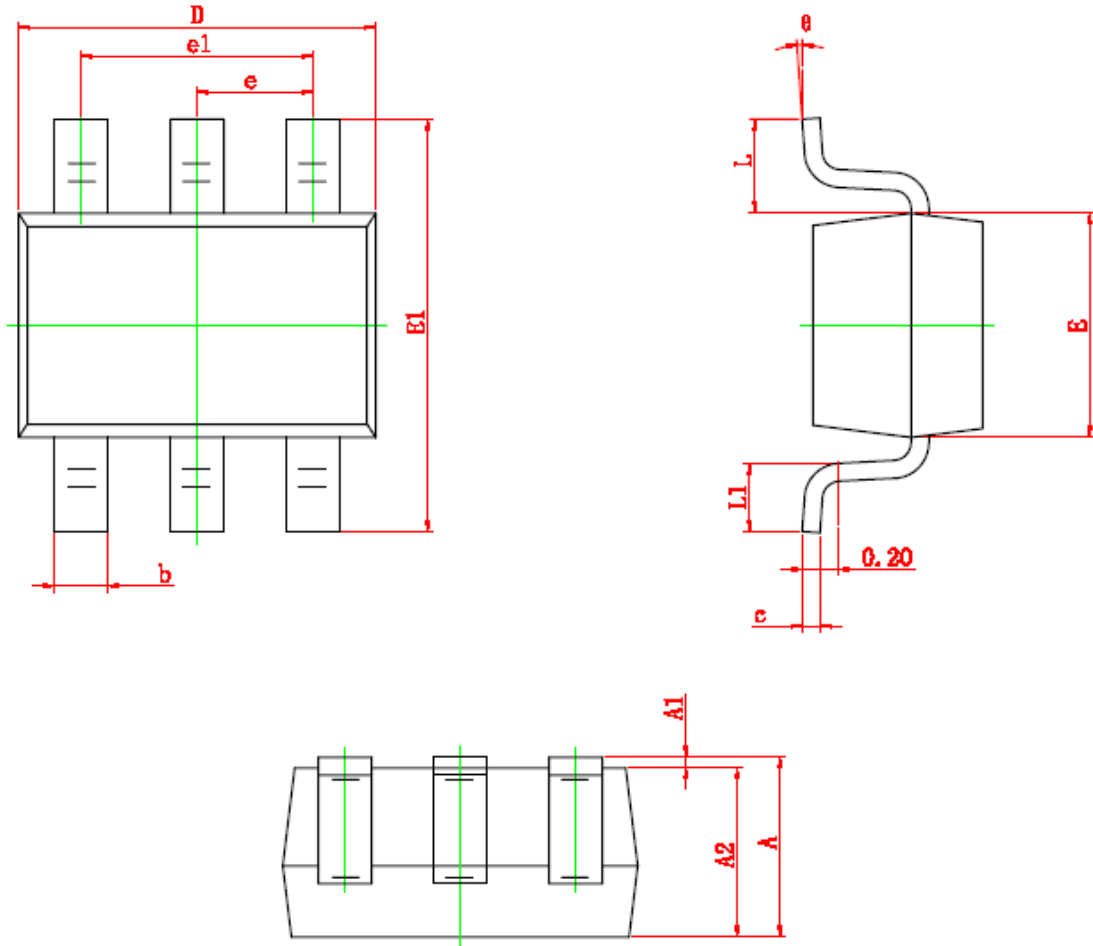




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### SOT-363 PACKAGE OUTLINE



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°



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