



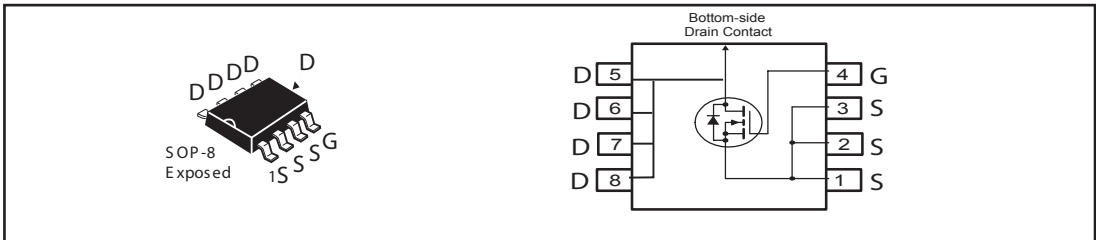
STM7064N

N-Channel Enhancement Mode Field Effect Transistor

PRODUCT SUMMARY		
V _{DSS}	I _D	R _{DS(ON)} (mΩ) Typ
30V	16A	6 @ V _{GS} = 10V
		8.5 @ V _{GS} = 4.5V

FEATURES

- Super high dense cell design for low R_{DS(ON)}.
- Rugged and reliable.
- Surface Mount Package.
- Thermal Pad Exposed with Standard SOP-8 Outline



ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	30	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current-Continuous ^a @ T _J =25°C -Pulsed ^b	I _D	16	A
	I _{DM}	50	A
Drain-Source Diode Forward Current ^a	I _S	1.7	A
Maximum Power Dissipation ^a	P _D	3.0	W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 to 150	°C

THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Ambient ^a	R _{θJA}	40	°C/W
--	------------------	----	------

STM7064N

ELECTRICAL CHARACTERISTICS (T_c=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ ^c	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250uA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V			1	uA
Gate-Body Leakage	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
ON CHARACTERISTICS^b						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	1	1.6	3	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D = 16A		6	7.5	m ohm
		V _{GS} = 4.5V, I _D = 12A		8.5	10	m ohm
On-State Drain Current	I _{D(ON)}	V _{DS} = 10V, V _{GS} = 10V	30			A
Forward Transconductance	g _{FS}	V _{DS} = 10V, I _D = 8A		20		S
DYNAMIC CHARACTERISTICS^c						
Input Capacitance	C _{ISS}	V _{DS} = 15V, V _{GS} = 0V f = 1.0MHz		3200		pF
Output Capacitance	C _{OSS}			550		pF
Reverse Transfer Capacitance	C _{RSS}			320		pF
Gate resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1.0MHz		3.2		ohm
SWITCHING CHARACTERISTICS^c						
Turn-On Delay Time	t _{D(ON)}	V _{DD} = 15V I _D = 1 A V _{GS} = 10V R _{GEN} = 6 ohm		32		ns
Rise Time	t _r			48		ns
Turn-Off Delay Time	t _{D(OFF)}			93		ns
Fall Time	t _f			30		ns
Total Gate Charge	Q _g	V _{DS} = 15V, I _D = 16A, V _{GS} = 10V		58.6		nC
		V _{DS} = 15V, I _D = 16A, V _{GS} = 4.5V		29		nC
Gate-Source Charge	Q _{gs}	V _{DS} = 15V, I _D = 16A		6.5		nC
Gate-Drain Charge	Q _{gd}	V _{GS} = 10V		12		nC

STM7064N

ELECTRICAL CHARACTERISTICS (T_c=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
DRAIN-SOURCE DIODE CHARACTERISTICS^b						
Diode Forward Voltage	V _{SD}	V _{GS} = 0V, I _s = 1.7A		0.74	1.3	V

Notes

- a. Surface Mounted on FR4 Board, t ≤ 10sec.
- b. Pulse Test: Pulse Width ≤ 300us, Duty Cycle ≤ 2%.
- c. Guaranteed by design, not subject to production testing.

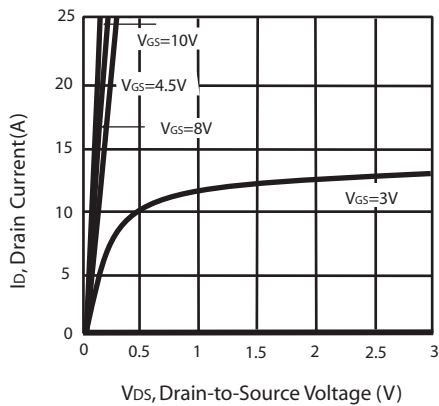


Figure 1. Output Characteristics

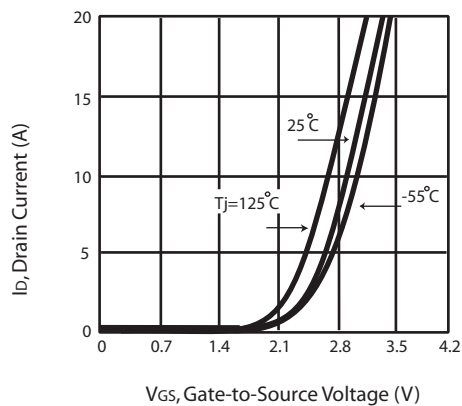


Figure 2. Transfer Characteristics

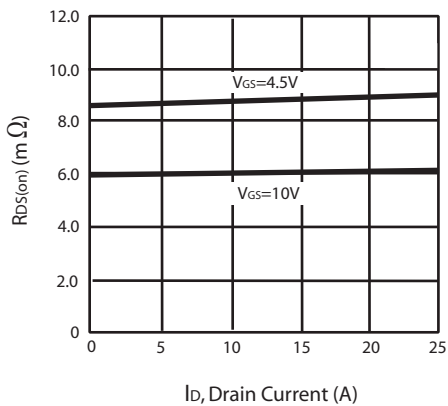


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

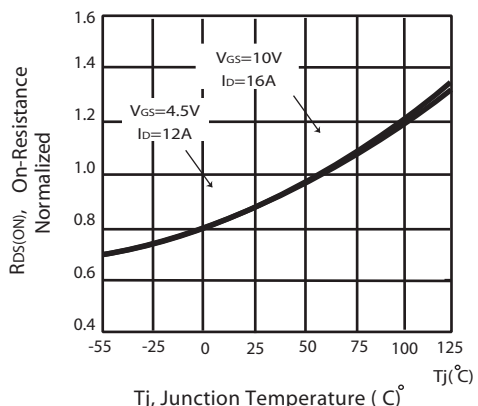


Figure 4. On-Resistance vs. Temperature

STM7064N

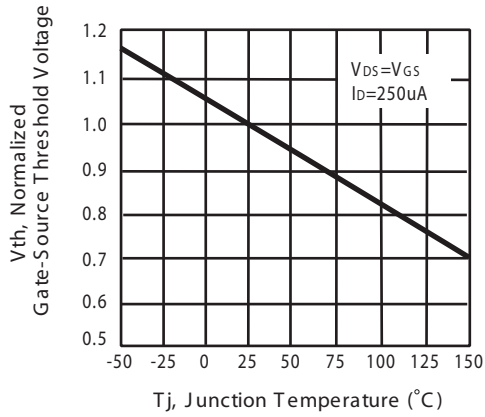


Figure 5. Gate Threshold Variation with Temperature

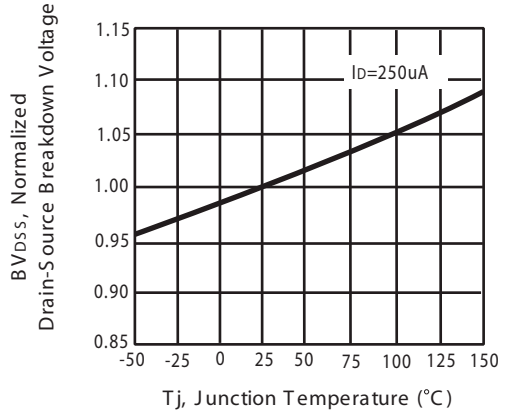


Figure 6. Breakdown Voltage Variation with Temperature

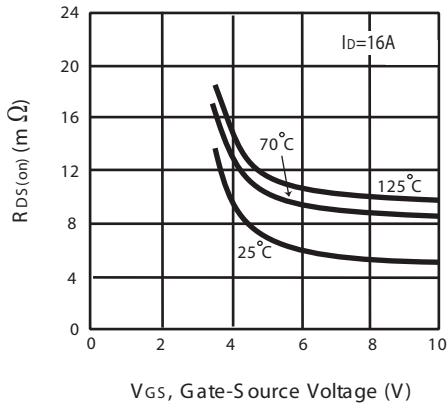


Figure 7. On-Resistance vs. Gate-Source Voltage

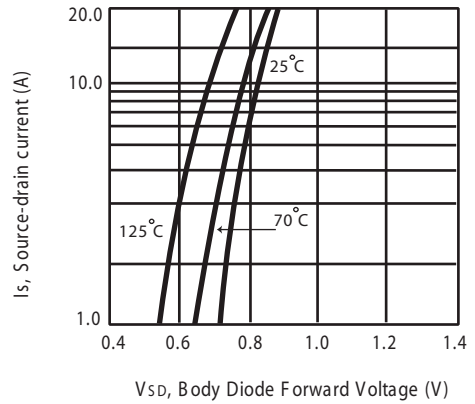
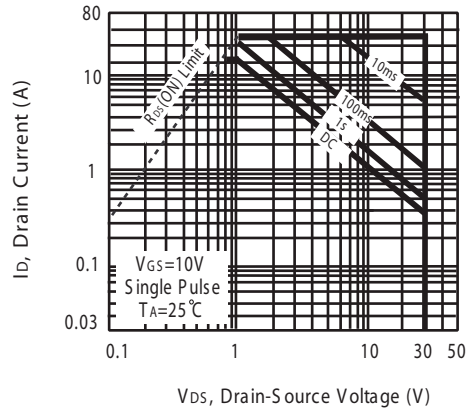
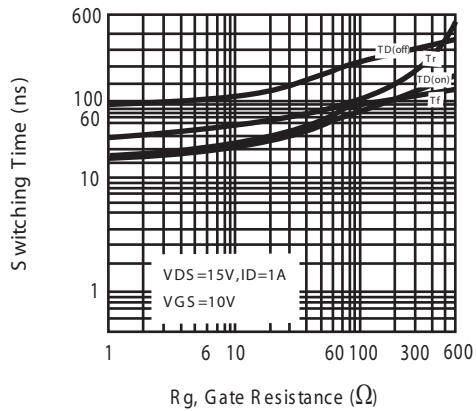
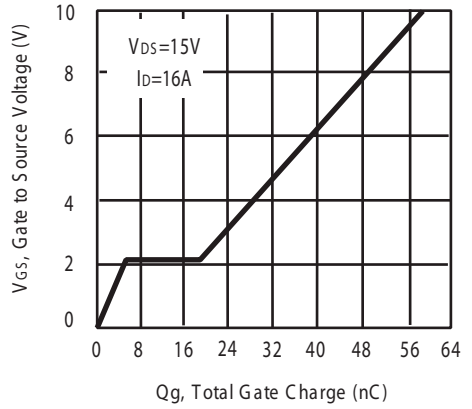
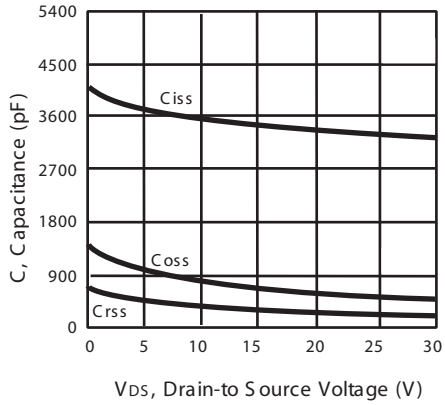


Figure 8. Body Diode Forward Voltage Variation with Source Current

STM7064N



STM7064N

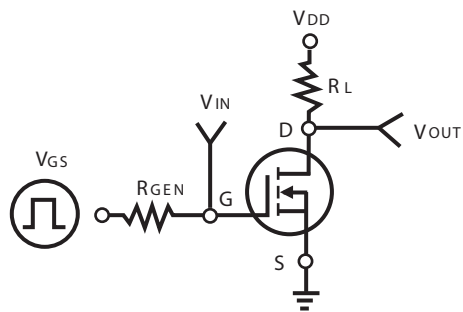


Figure 11. Switching Test Circuit

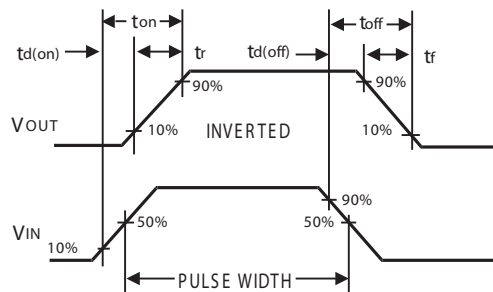
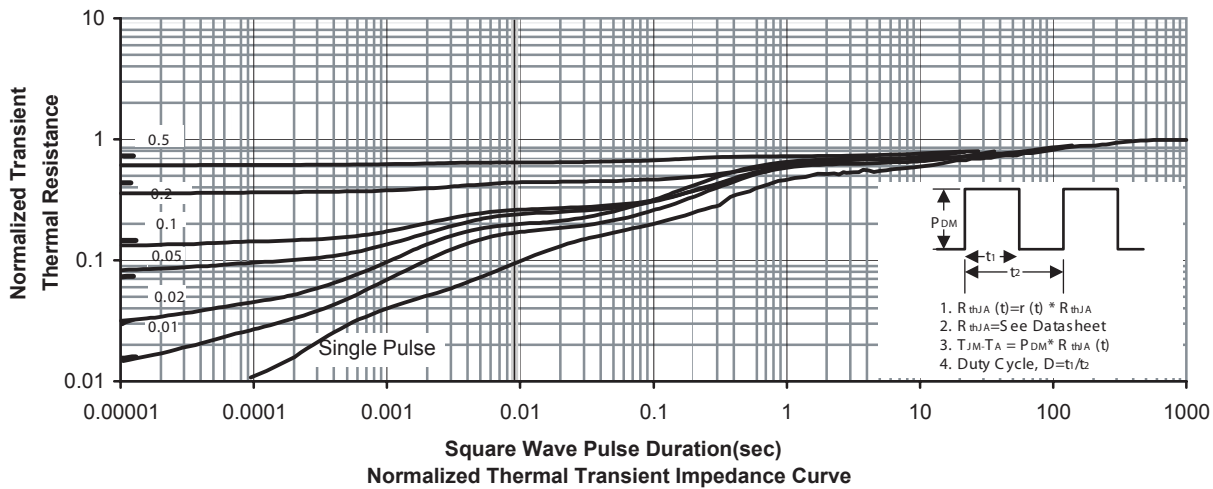


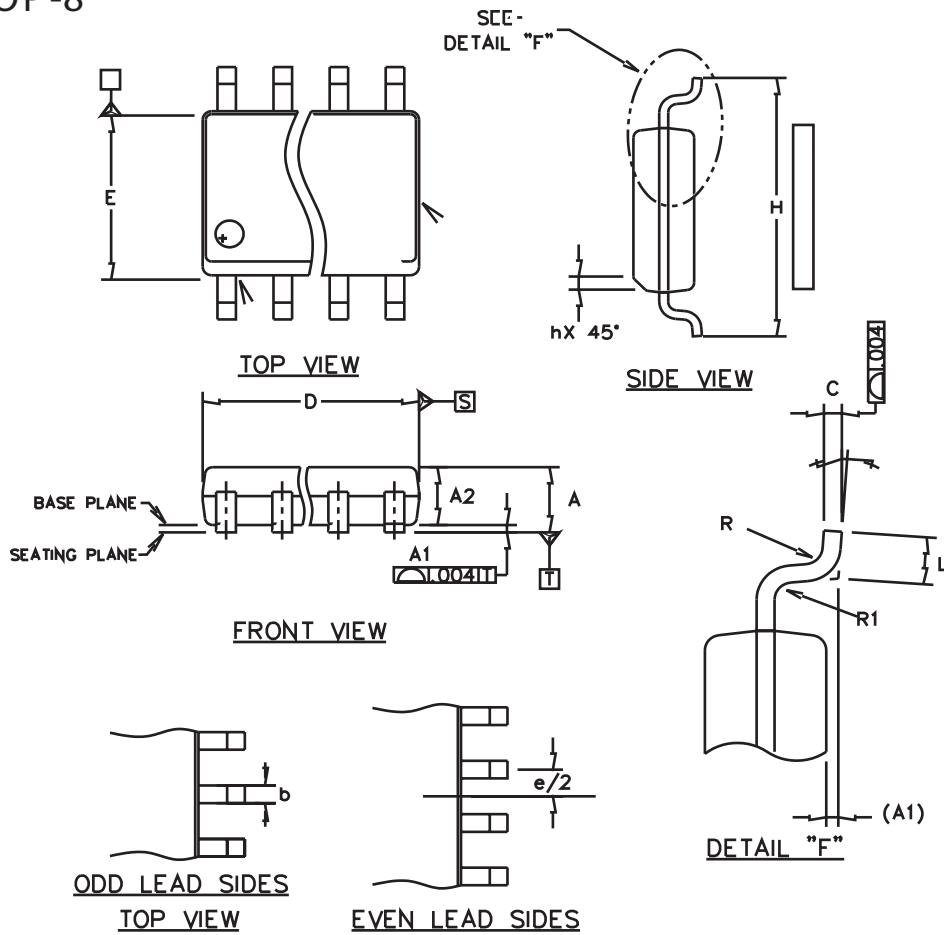
Figure 12. Switching Waveforms



STM7064N

PACKAGE OUTLINE DIMENSIONS

SOP-8



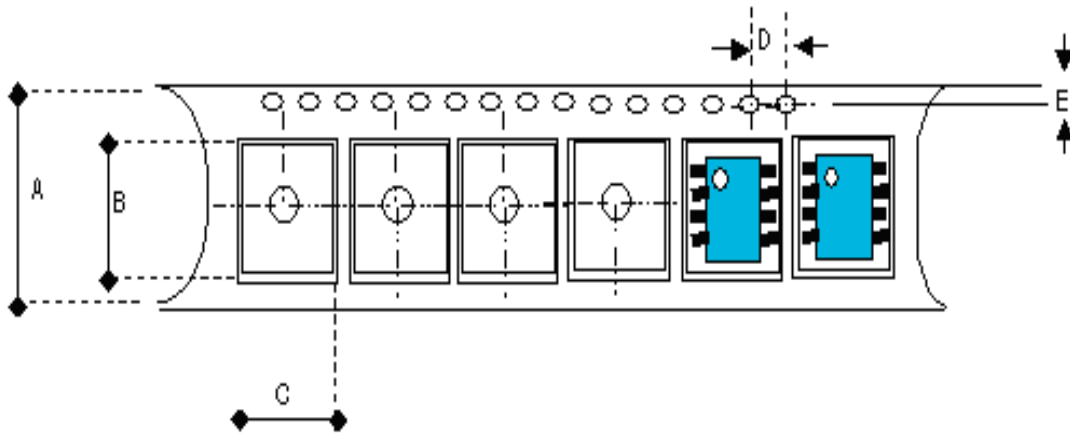
SYMBOL	MIN.	NOM.	MAX.	NOTE
A	.055	—	.069	1
A1	.0005	—	.004	1,5
A2	.050	—	.064	1
b	.013	—	.020	1
C	.008	—	.010	1,5
R	.003	—	—	1
R1	.003	—	—	1
e	.050 BSC.			1
E	.150	—	.157	1,4
h	.010	—	.019	1
H	.228	—	.244	1,5
L	.020	—	.028	1,6
Q1	0°	—	8°	1

VAR	D			N
	MIN.	NOM.	MAX.	
AA	0.189	—	—	8
AB	0.337	—	—	14
AC	0.386	—	—	16
NOTES	1,3	—	—	16

STM7064N

SO-8 Tape and Reel Data

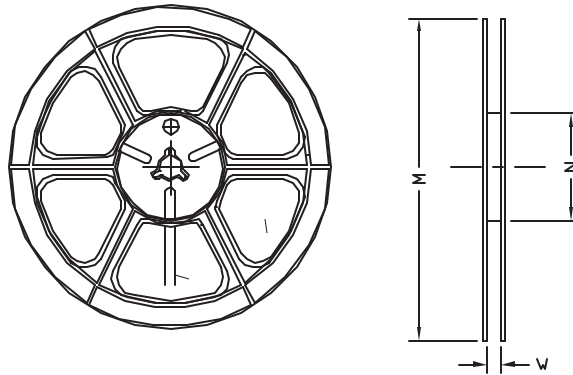
SO-8 Carrier Tape



unit:mm

PACKAGE	A	B	C	D	E
SOP 8N 150mil	12.0 ±0.3	5.0 ±0.1	4.0 ±0.1	6.5 ±0.1	1.5 ±0.1

SO-8 Reel



UNIT:mm

TAPE SIZE	REEL SIZE	M	N	W
12 mm	φ 300	300	101	10 ± 0.2