

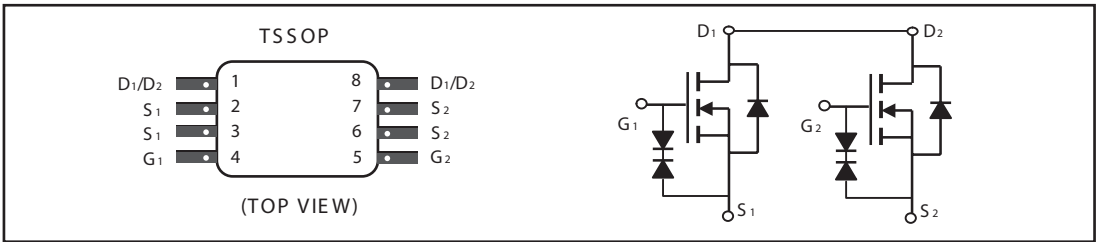


Dual N-Channel Enhancement Mode Field Effect Transistor

PRODUCT SUMMARY		
V _{DSS}	I _D	R _{DS(ON)} (mΩ) Max
20V	6A	26 @ V _{GS} = 4.0V 40 @ V _{GS} = 2.5V

FEATURES

- Super high dense cell design for low R_{DS(ON)}.
- Rugged and reliable.
- Surface Mount Package.
- ESD Protected.



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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	±12	V
Drain Current-Continuous ^a -Pulsed ^b	I _D	6	A
	I _{DM}	24	A
Drain-Source Diode Forward Current ^a	I _S	1.7	A
Maximum Power Dissipation ^a	P _D	1.5	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}	85	°C/W
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ELECTRICAL CHARACTERISTICS (T_A = 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 = 250µA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16V, V _{GS} = 0V			1	µA
Gate-Body Leakage	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±10	µA
ON CHARACTERISTICS ^b						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250µA	0.5	0.8	1.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} = 4.0V, I _D = 5A		22	26	m ohm
		V _{GS} = 2.5V, I _D = 3A		30	40	m ohm
Forward Transconductance	g _{FS}	V _{DS} = 5V, I _D = 5A		19		S
DYNAMIC CHARACTERISTICS ^c						
Input Capacitance	C _{ISS}	V _{DS} = 8V, V _{GS} = 0V f = 1.0MHz		693		pF
Output Capacitance	C _{OSS}			189		pF
Reverse Transfer Capacitance	C _{RSS}			136		pF
SWITCHING CHARACTERISTICS ^c						
Turn-On Delay Time	t _{D(ON)}	V _{DD} = 10V, I _D = 1A, V _{GEN} = 4.0V, R _{GEN} = 10 ohm		31		ns
Rise Time	t _r			62		ns
Turn-Off Delay Time	t _{D(OFF)}			96		ns
Fall Time	t _f			40		ns
Total Gate Charge	Q _g	V _{DS} = 10V, I _D = 5A, V _{GS} = 4.0V		11		nC
Gate-Source Charge	Q _{gs}			1.8		nC
Gate-Drain Charge	Q _{gd}			4.9		nC

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
DRAIN-SOURCE DIODE CHARACTERISTICS ^b						
Diode Forward Voltage	V_{SD}	$V_{GS} = 0\text{ V}, I_s = 1.7\text{ A}$		0.8	1.2	V

Notes

- a. Surface Mounted on FR4 Board, $t \leq 10\text{sec}$.
- b. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.
- c. Guaranteed by design, not subject to production testing.

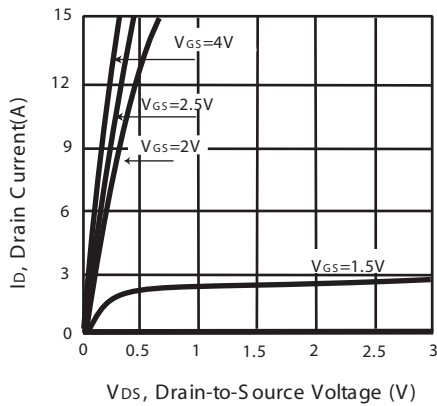


Figure 1. Output Characteristics

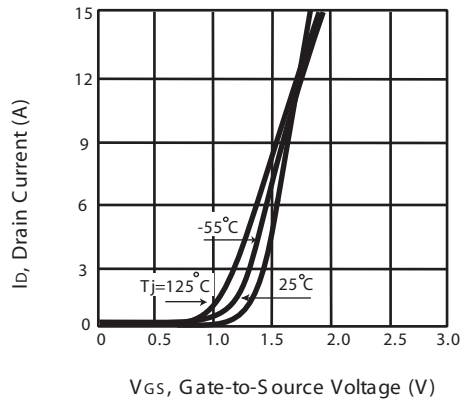


Figure 2. Transfer Characteristics

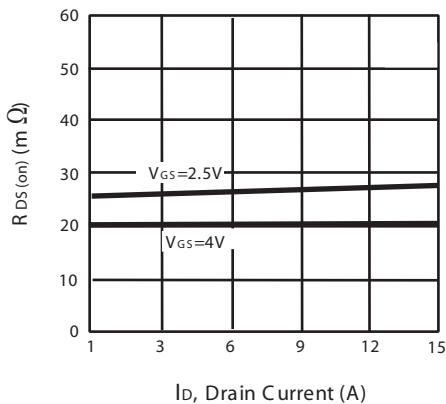


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

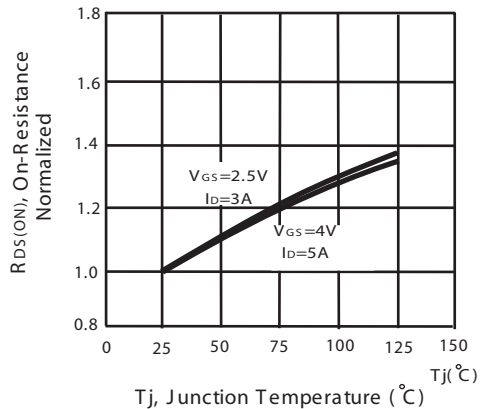


Figure 4. On-Resistance Variation with Drain Current and Temperature

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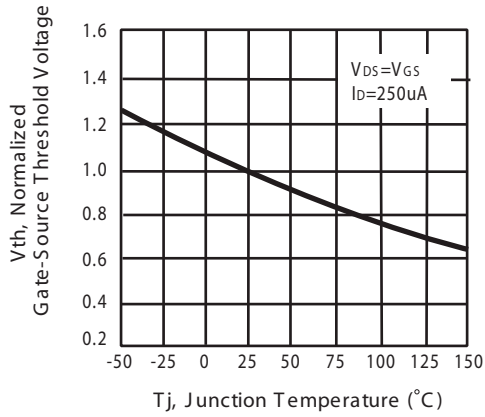


Figure 5. Gate Threshold Variation with Temperature

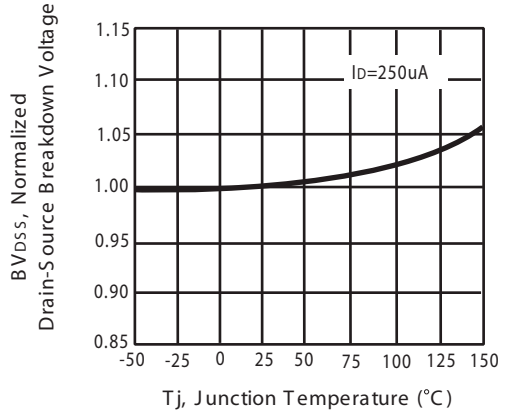


Figure 6. Breakdown Voltage Variation with Temperature

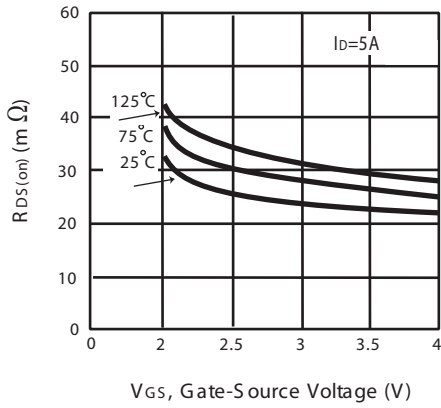


Figure 7. On-Resistance vs. Gate-Source Voltage

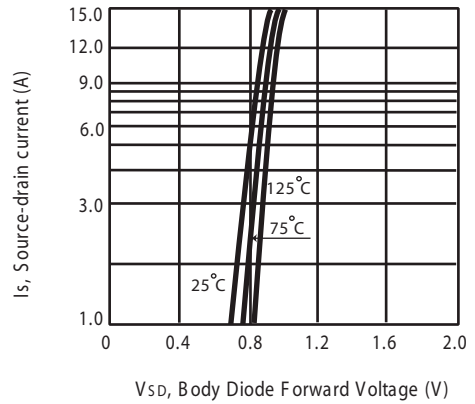
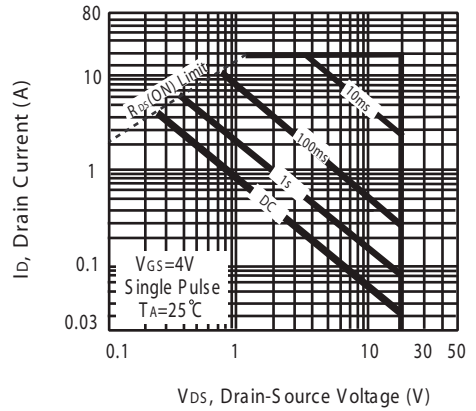
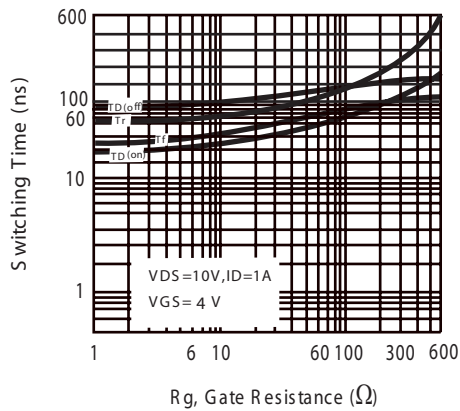
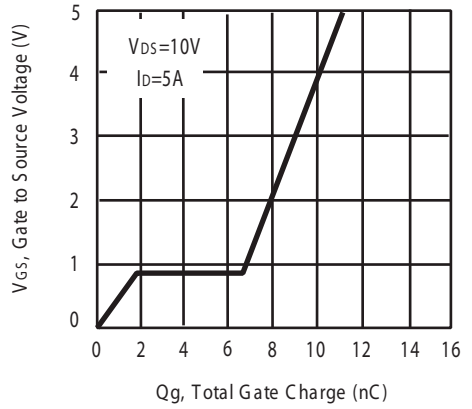
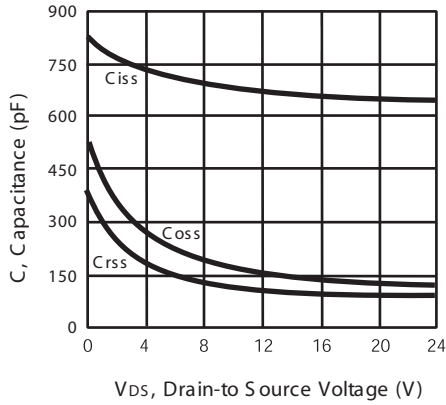


Figure 8. Body Diode Forward Voltage Variation with Source Current

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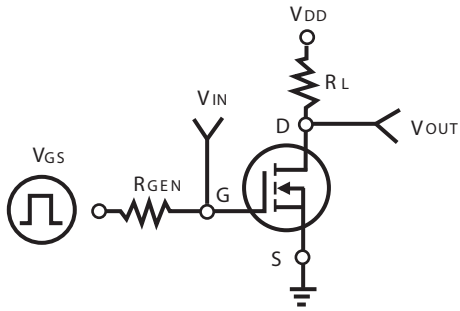


Figure 11. Switching Test Circuit

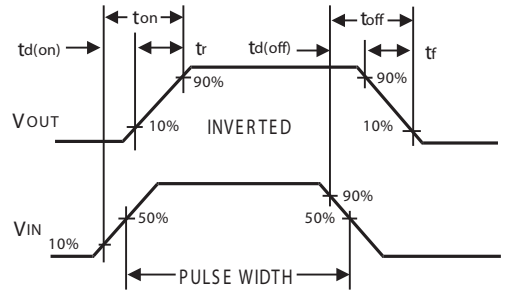
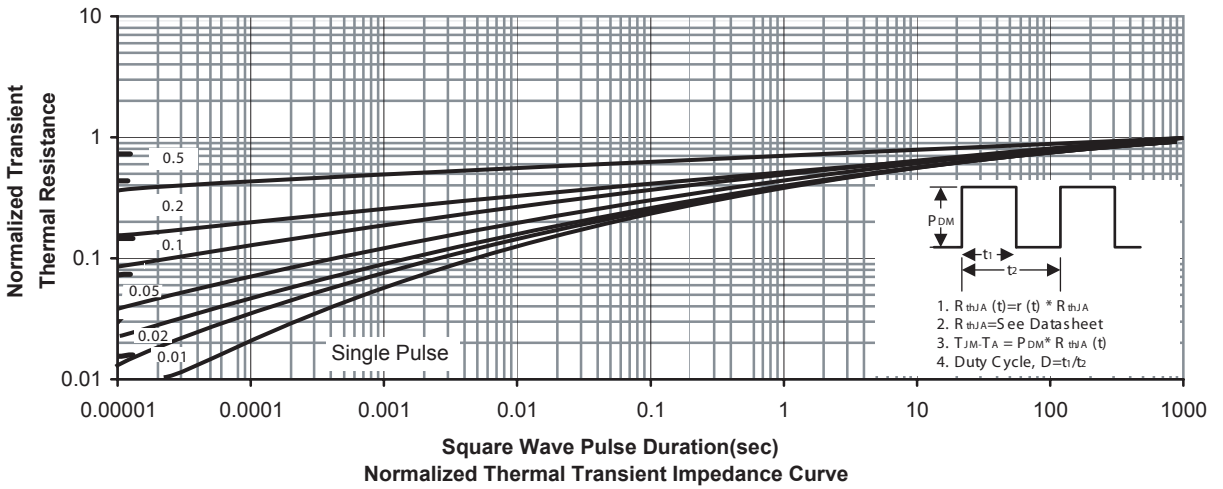


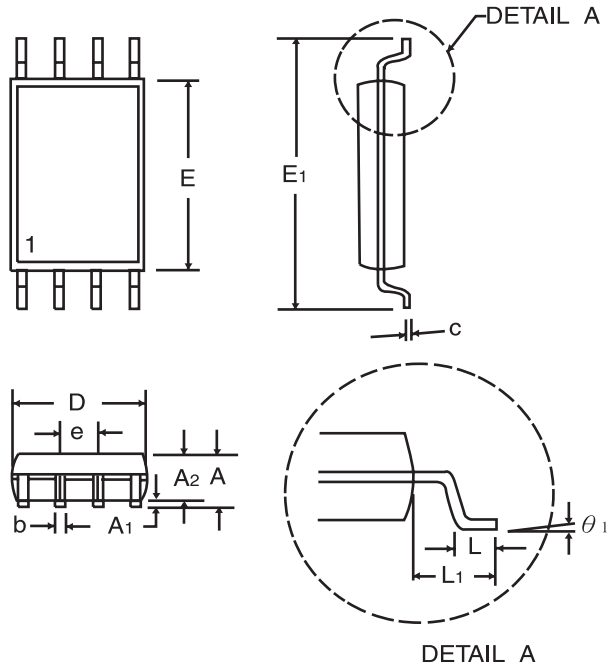
Figure 12. S switching Waveforms



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PACKAGE OUTLINE DIMENSIONS

TSSOP-8

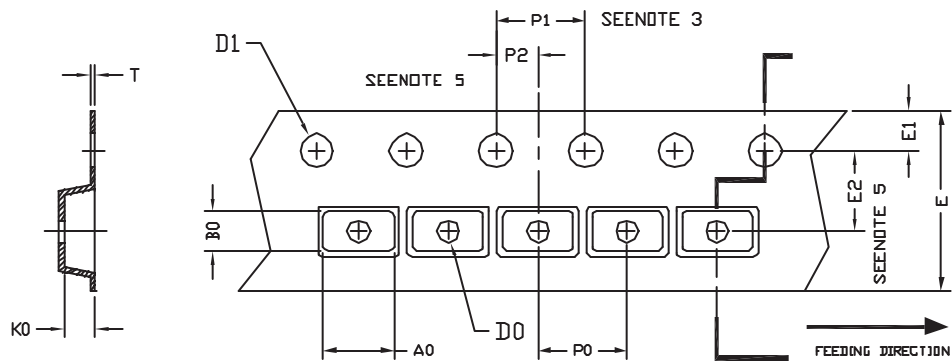


SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.05	1.20	0.041	0.047
A1	0.05	0.15	0.002	0.006
A2	-	1.05	-	0.041
b	0.20	0.28	0.008	0.011
c	0.127		0.005	
D-8	2.90	3.10	0.114	0.122
E	4.30	4.50	0.169	0.177
E1	6.20	6.60	0.244	0.260
e	0.65BSC		0.025BSC	
L	0.50	0.70	0.020	0.028
L1	1.00		0.039	
θ_1	0°	8°	0°	8°

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TSSOP-8 Tape and Reel Data

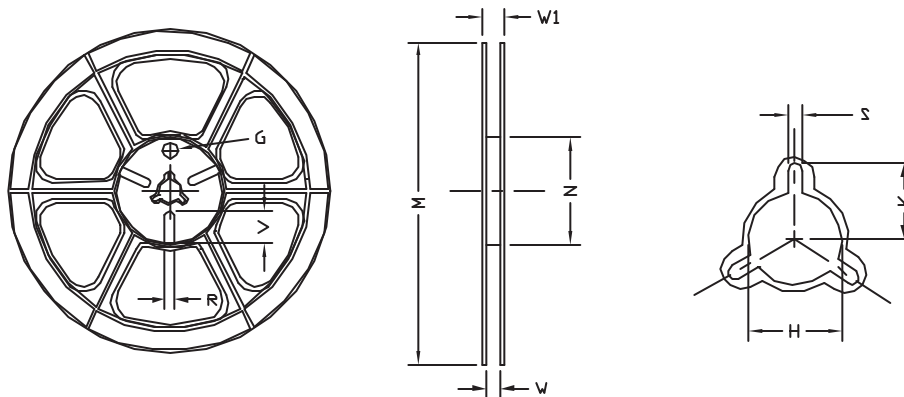
TSSOP-8 Carrier Tape



UNIT : mm

PACKAGE	A0	B0	K0	D0	D1	E	E1	E2	P0	P1	P2	T
TSSOP 8	6.08	4.40	1.60	$\phi 1.50$ + 0.1 - 0.0	$\phi 1.50$ + 0.1 - 0.0	12.00 ± 0.3	1.75	5.50 ± 0.05	8.00	4.00	2.00 ± 0.05	0.30 ± 0.05

TSSOP-8 Reel



UNIT : mm

TAPE SIZE	REEL SIZE	M	N	W	W1	H	K	S	G	R	V
12 mm	$\phi 330$	330	100	12.5	16.0	$\phi 13.0$ + 0.5 - 0.2	10.6	2.0 ± 0.5	---	---	---