



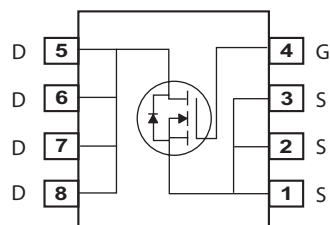
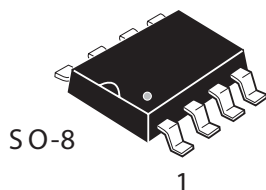
N-Channel Logic Level Enhancement Mode Field Effect Transistor

PRODUCT SUMMARY

V _{DS}	I _D	R _{DS(ON)} (mΩ) Typ
30V	13A	5.5 @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.



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

Symbol	Parameter	Limit	Units
V _{DS}	Drain-Source Voltage	30	V
V _{DGR}	Drain-Gate Voltage (R _{GS} = 20 kΩ)	30	V
V _{GS}	Gate-Source Voltage	±20	V
I _D	Drain Current-Continuous ^a	T _A =25°C	13
		T _A =70°C	10.5
I _{DM}	-Pulsed ^b	52	A
E _{AS}	Single Pulse Avalanche Energy ^d	45	mJ
I _{AR}	Avalanche Current	13	A
P _D	Maximum Power Dissipation ^a	T _A =25°C	2.5
		T _A =70°C	1.6
T _J , T _{STG}	Operating Junction and Storage Temperature Range	-55 to 150	°C

THERMAL CHARACTERISTICS

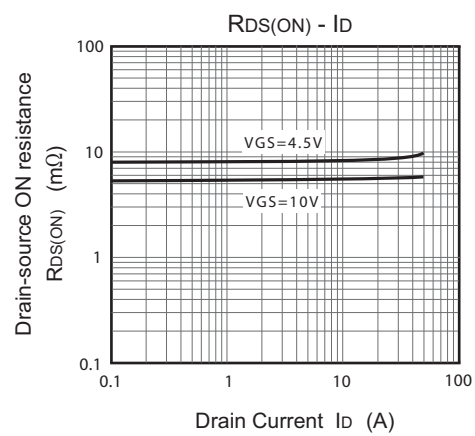
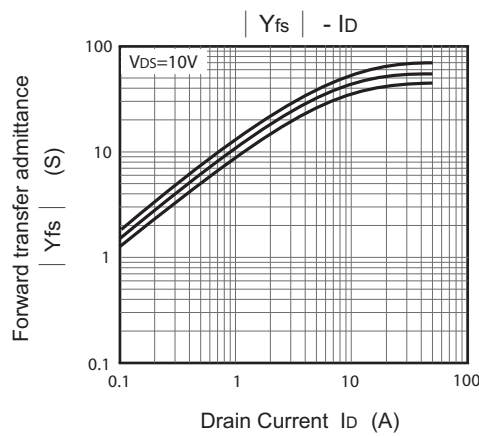
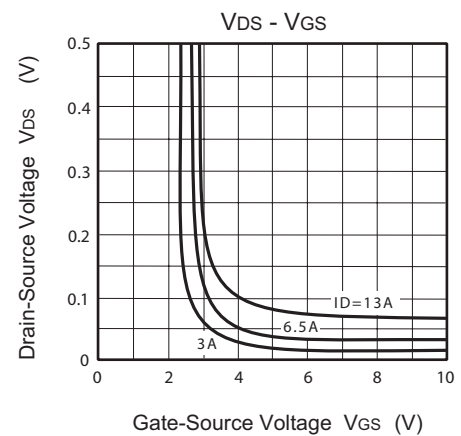
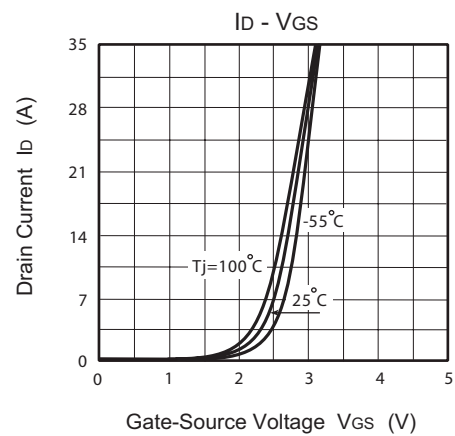
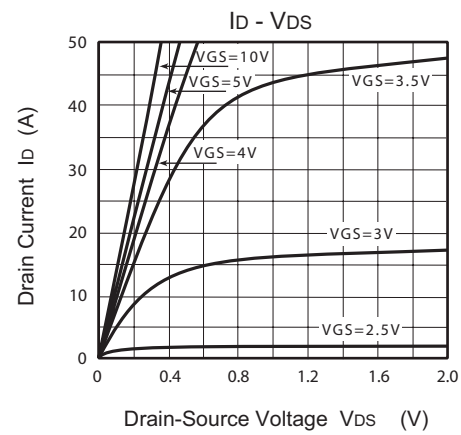
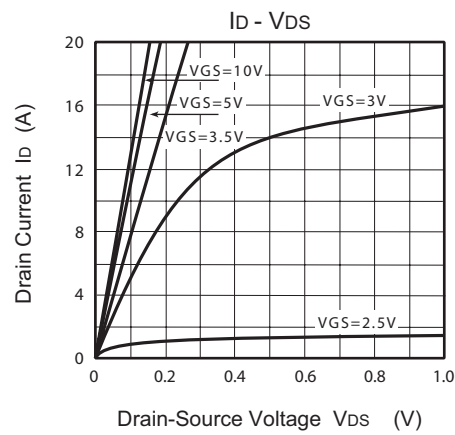
R _{θJA}	Thermal Resistance, Junction-to-Ambient ^a	50	°C/W
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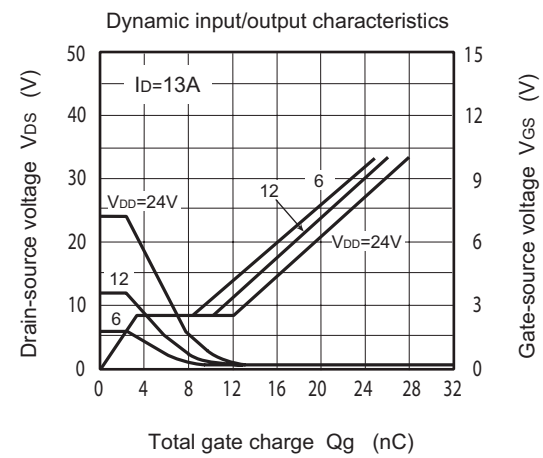
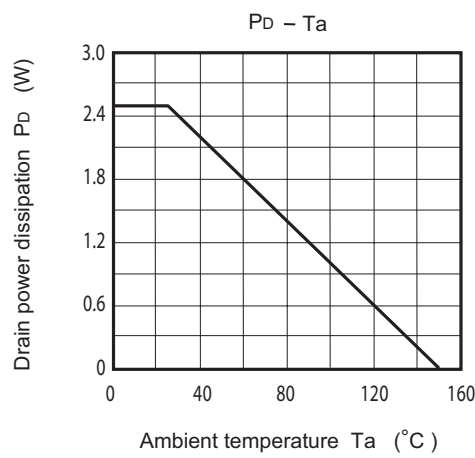
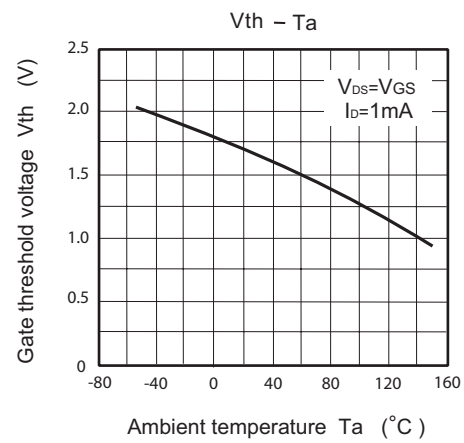
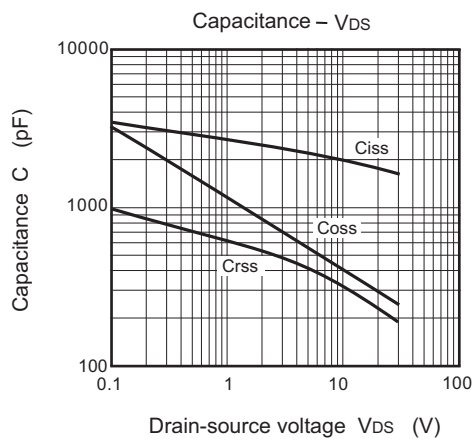
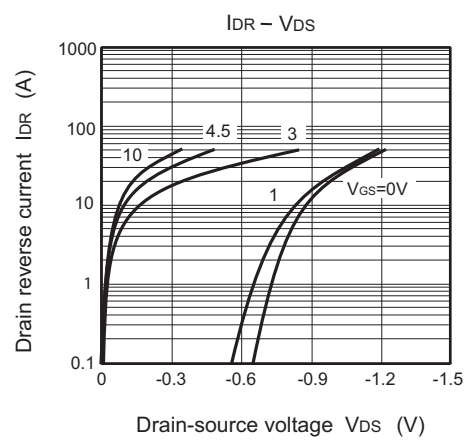
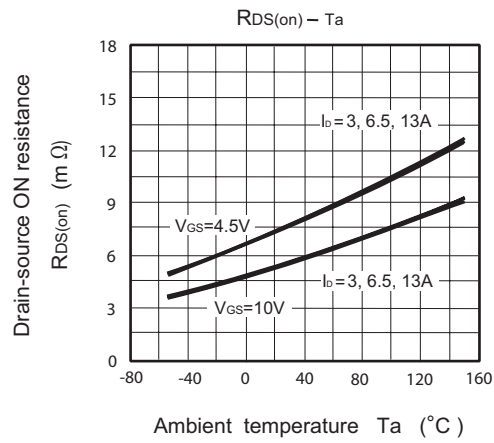
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

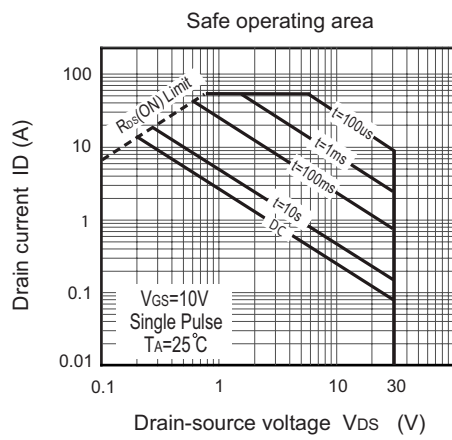
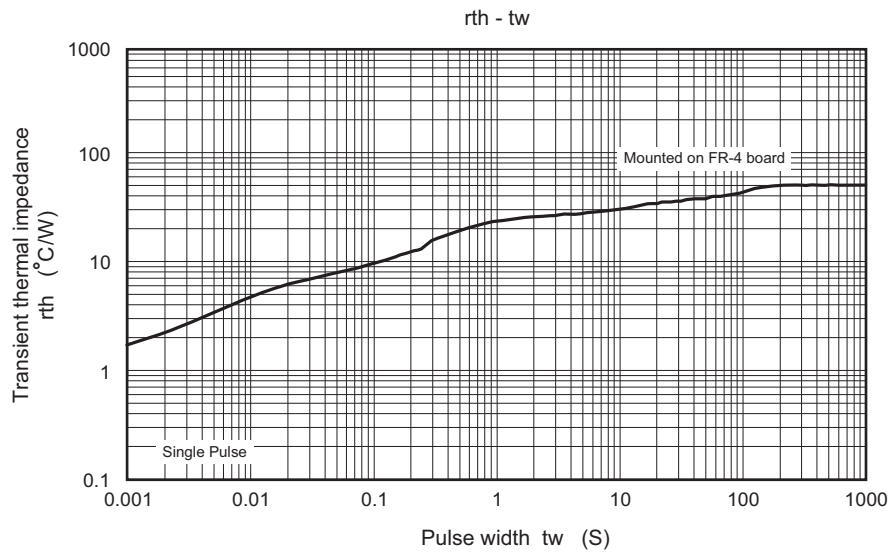
Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV _{DSS}	Drain-Source Breakdown Voltage	I _D =10mA , V _{GS} =0V	30			V
BV _{DSX}		I _D =10mA , V _{GS} =-20V	10			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =24V , V _{GS} =0V			1	uA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V , V _{DS} =0V			±100	nA
ON CHARACTERISTICS						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =1mA	1.3	1.8	2.5	V
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =10V , I _D =6.5A		5.5	7	m ohm
		V _{GS} =4.5V , I _D =6.5A		8.5	11.5	m ohm
g _{FS}	Forward Transconductance	V _{DS} =10V , I _D =6.5A		31		S
DYNAMIC CHARACTERISTICS °						
C _{ISS}	Input Capacitance	V _{DS} =10V,V _{GS} =0V f=1.0MHz		1200		pF
C _{OSS}	Output Capacitance			410		pF
C _{RSS}	Reverse Transfer Capacitance			316		pF
SWITCHING CHARACTERISTICS °						
t _{D(ON)}	Turn-On Delay Time	V _{DD} =15V I _D =6.5A V _{GS} =10V R _{GEN} =4.7 ohm		24		ns
t _r	Rise Time			43		ns
t _{D(OFF)}	Turn-Off Delay Time			62		ns
t _f	Fall Time			44		ns
Q _g	Total Gate Charge	V _{DS} =24V,I _D =13A,V _{GS} =10V		29		nC
Q _{gs}	Gate-Source Charge	V _{DS} =24V,I _D =13A, V _{GS} =10V		2.5		nC
Q _{gd}	Gate-Drain Charge			10		nC
SOURCE-DRAIN RATINGS AND CHARACTERISTICS						
I _{DRP}	Drain reverse current - Pulse				52	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V,I _S =13A		0.92	1.2	V

Notes

- Surface Mounted on FR4 Board,t ≤ 10sec.
- Pulse Test:Pulse Width ≤ 300us, Duty Cycle ≤ 2%.
- Guaranteed by design, not subject to production testing.
- Starting T_J=25°C,L=100uH,V_{DD} = 20V.

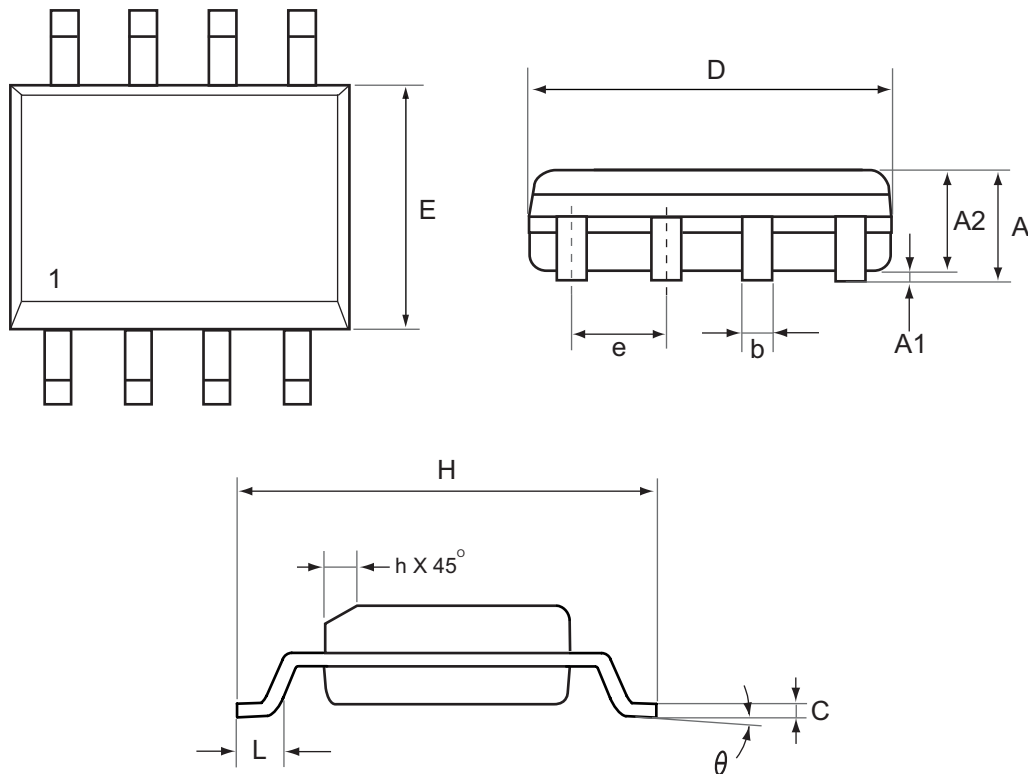






PACKAGE OUTLINE DIMENSIONS

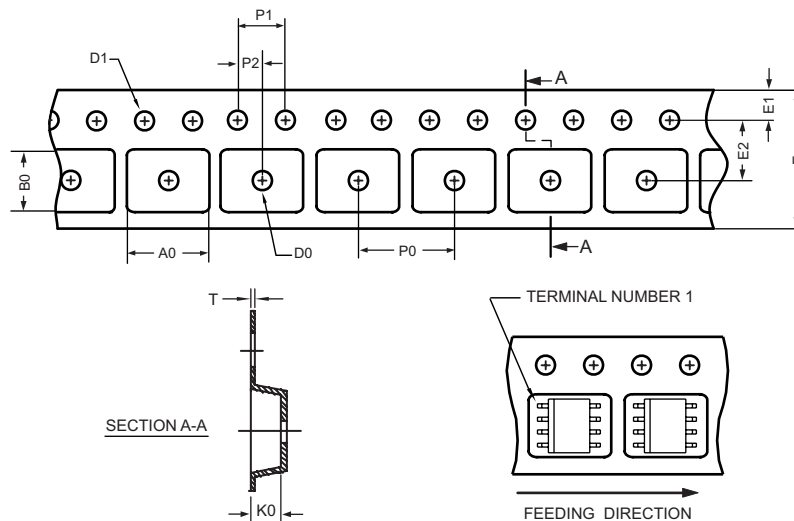
SO-8



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.35	1.75	0.053	0.069
A1	0.10	0.25	0.004	0.010
A2	1.25	1.63	0.049	0.064
b	0.31	0.51	0.012	0.020
C	0.17	0.25	0.007	0.010
D	4.80	5.00	0.189	0.197
E	3.70	4.00	0.146	0.157
e	1.27 REF.		0.050 BSC	
H	5.80	6.20	0.228	0.244
L	0.40	1.27	0.016	0.050
θ	0°	8°	0°	8°
h	0.25	0.50	0.010	0.020

SO-8 Tape and Reel Data

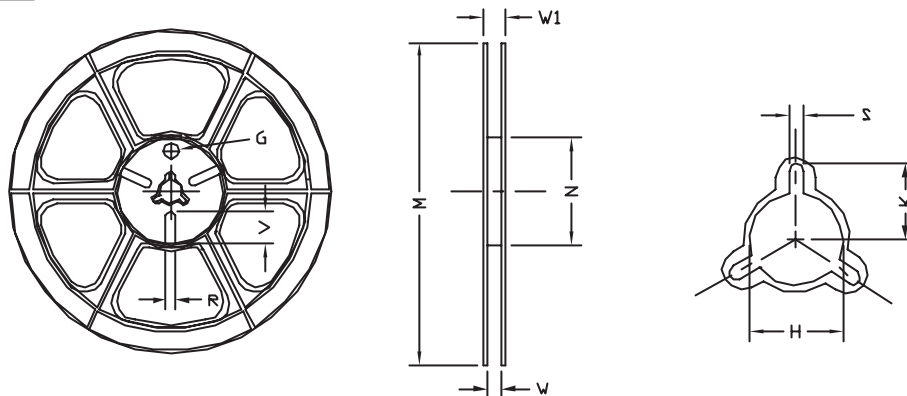
SO-8 Carrier Tape



unit:mm

PACKAGE	A0	B0	K0	D0	D1	E	E1	E2	P0	P1	P2	T
SOP 8N 150mil	6.50 ±0.15	5.25 ±0.10	2.10 ±0.10	φ 1.5 (MIN)	φ 1.55 ±0.10	12.0 +0.3 -0.1	1.75 ±0.10	5.5 ±0.10	8.0 ±0.10	4.0 ±0.10	2.0 ±0.10	0.30 ±0.013

SO-8 Reel



UNIT:mm

TAPE SIZE	REEL SIZE	M	N	W	W1	H	K	S	G	R	V
12 mm	φ 330	330 ± 1	62 ±1.5	12.4 + 0.2	16.8 - 0.4	φ 12.75 + 0.15	---	2.0 ±0.15	---	---	---