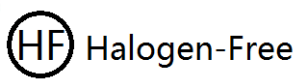


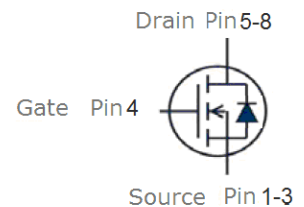
Features

- N-Channel
- Enhancement mode
- low on-resistance @ $V_{GS}=4.5\text{ V}$
- Fast Switching
- Pb-free lead plating; RoHS compliant



Part ID	Package Type	Marking	Tape and reel information
VSO280N15MS	SOP8	280N15M	3000pcs/reel

V_{DS}	150	V
$R_{DS(on),typ@V_{GS}=10V}$	230	mΩ
$R_{DS(on),typ@V_{GS}=4.5V}$	235	mΩ
I_D	3	A



Maximum ratings, at $T_A=25^{\circ}\text{C}$, unless otherwise specified

Symbol	Parameter		Rating	Unit
$V_{(BR)DSS}$	Drain-Source breakdown voltage		150	V
V_{GS}	Gate-Source voltage		±20	V
I_D	Continuous drain current@ $V_{GS}=10V$	$T_A=25^{\circ}C$	3	A
		$T_A=100^{\circ}C$	1.9	A
I_{DM}	Pulse drain current tested ①	$T_A=25^{\circ}C$	12	A
P_D	Maximum power dissipation	$T_A=25^{\circ}C$	1.7	W
I_S	Diode Continuous Forward Current	$T_A=25^{\circ}C$	3	A
MSL			Level 3	
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage temperature range		-55 to 175	°C
Thermal characteristics				
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		72	°C/W
$R_{\theta JC}$	Thermal Resistance-Junction to Case		45	°C/W

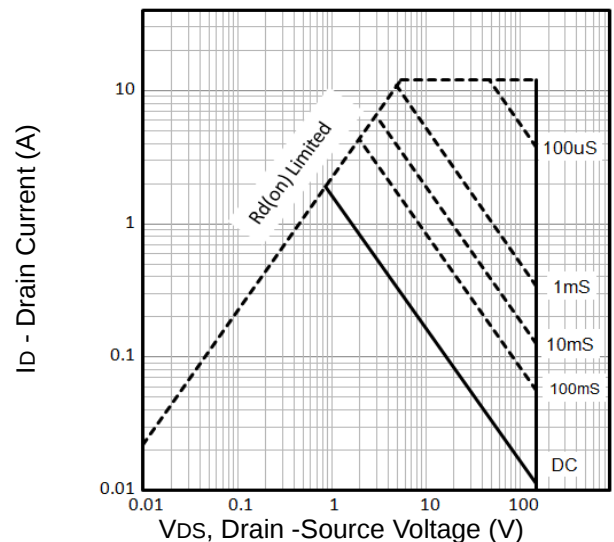
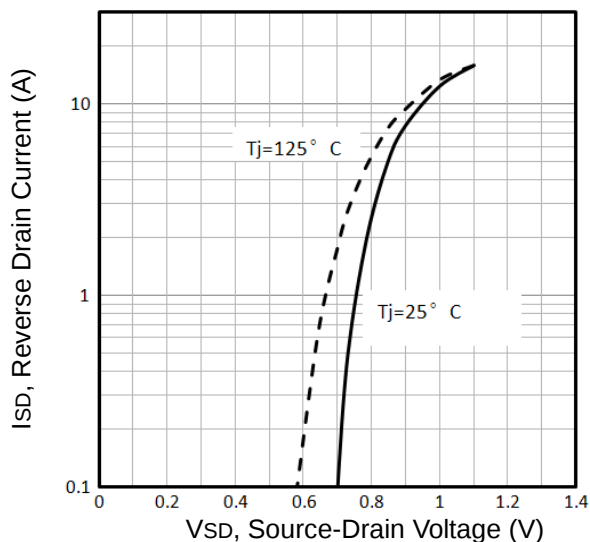
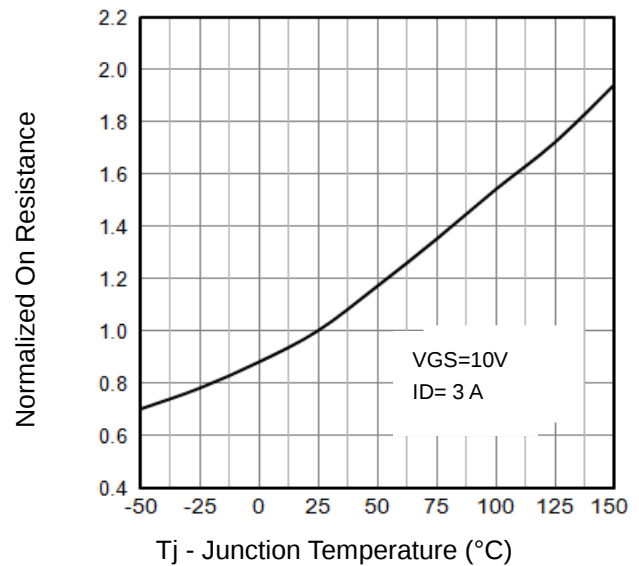
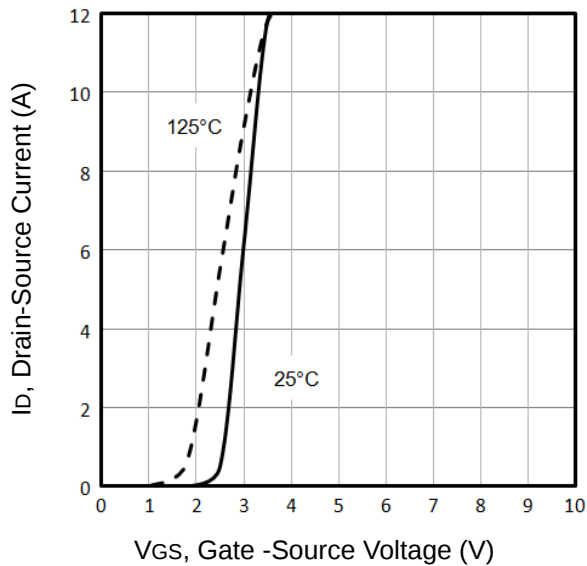
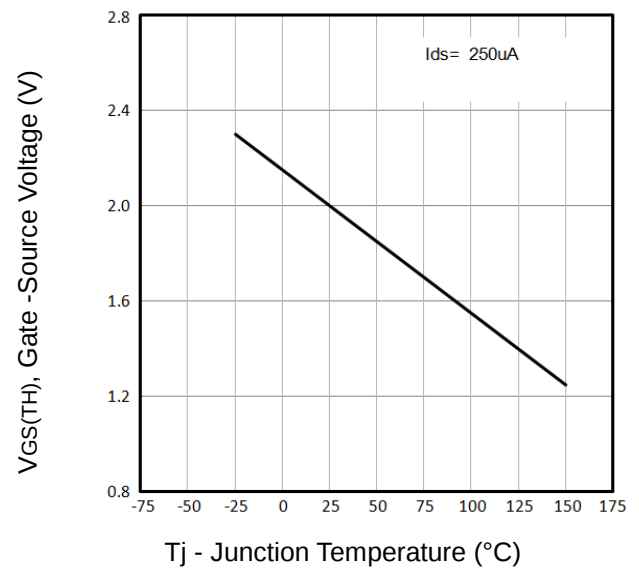
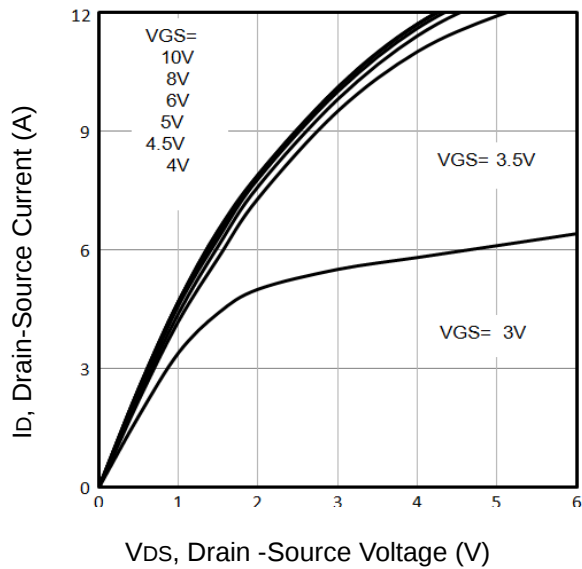
Typical Electrical Characteristics

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
Static Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V I _D =250μA	150	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current(Tc=25℃)	V _{DS} =150V,V _{GS} =0V	--	--	1	μA
	Zero Gate Voltage Drain Current(Tc=125℃)	V _{DS} =150V,V _{GS} =0V	--	--	100	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V,V _{DS} =0V	--	--	±100	nA
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} =V _{GS} ,I _D =250μA	1.0	2.0	3.0	V
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =10V, I _D =3A	--	230	270	mΩ
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =4.5V, I _D =2A	--	235	280	mΩ
Dynamic Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
C _{iss}	Input Capacitance	V _{DS} =75V,V _{GS} =0V, f=1MHz	--	855	--	pF
C _{oss}	Output Capacitance		--	105	--	pF
C _{rss}	Reverse Transfer Capacitance		--	30	--	pF
Q _g	Total Gate Charge	V _{DS} =75V,I _D =3A, V _{GS} =10V	--	19	--	nC
Q _{gs}	Gate-Source Charge		--	5	--	nC
Q _{gd}	Gate-Drain Charge		--	5.2	--	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DD} =75V, I _D =1A, R _G =6.8Ω, V _{GS} =4.5V	--	12	--	nS
t _r	Turn-on Rise Time		--	6	--	nS
t _{d(off)}	Turn-Off Delay Time		--	15.5	--	nS
t _f	Turn-Off Fall Time		--	4.5	--	nS
Source- Drain Diode Characteristics@ T _J = 25°C (unless otherwise stated)						
V _{SD}	Forward on voltage	I _{SD} =2A,V _{GS} =0V	--	0.78	1.20	V
t _{rr}	Reverse Recovery Time	T _J =25℃,I _{sd} =2A, V _{GS} =0V	--	33	--	nS
Q _{rr}	Reverse Recovery Charge	di/dt=100A/μs		241		nC

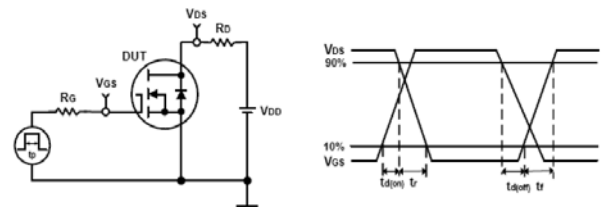
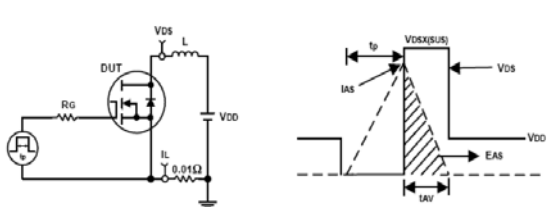
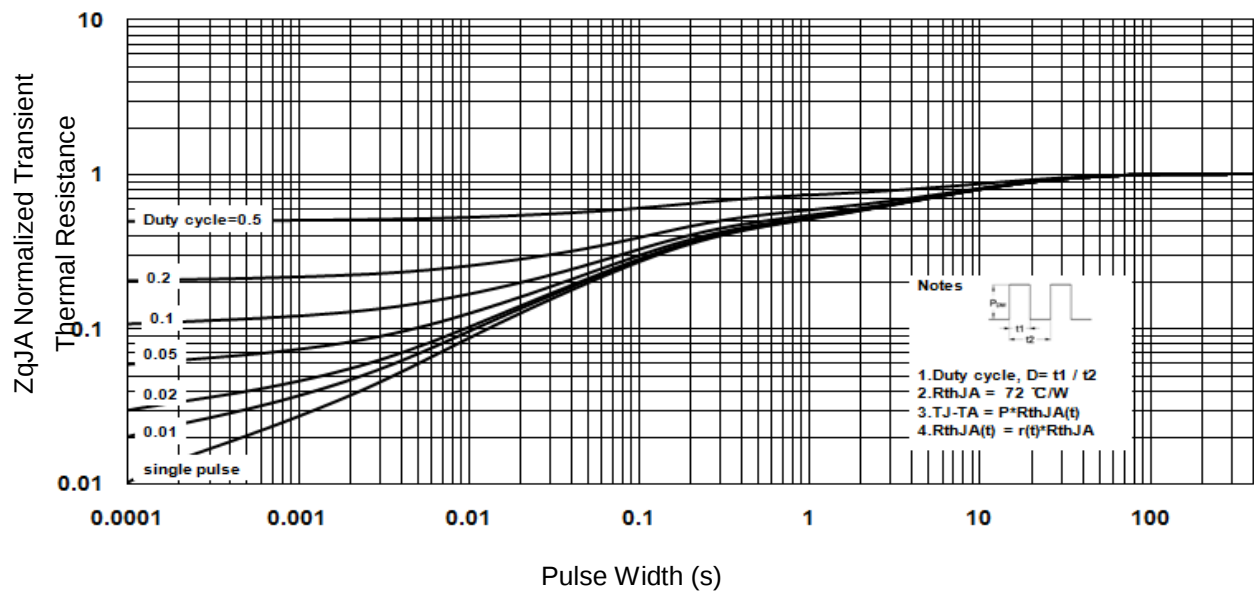
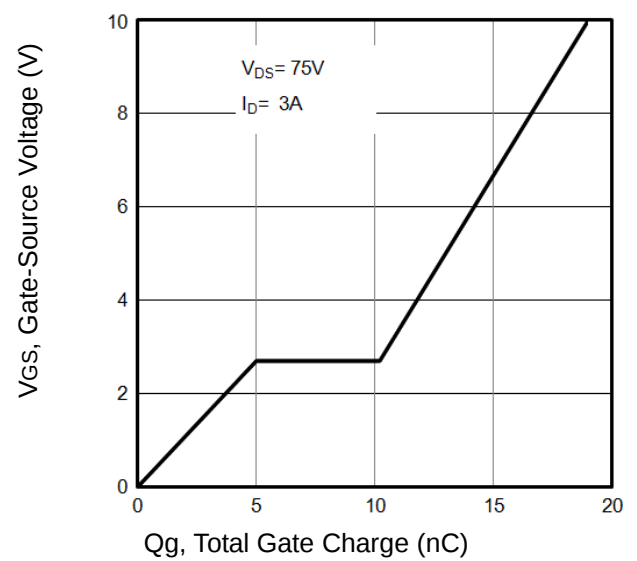
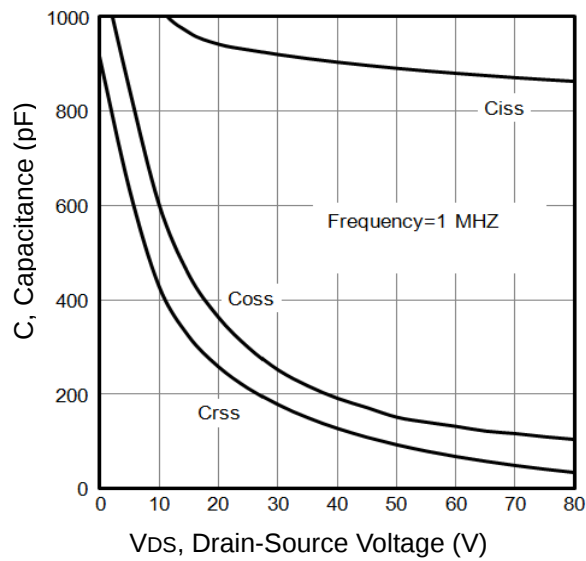
NOTE:

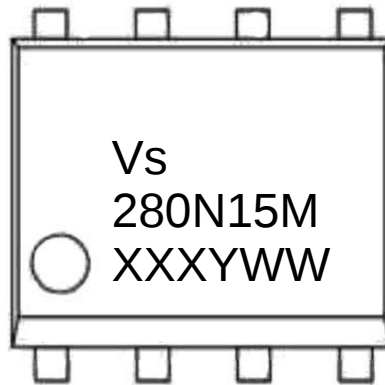
- ① Repetitive rating; pulse width limited by max. junction temperature
- ② Pulse width ≤ 300μs; duty cycles ≤ 2%.

Typical Characteristics



Typical Characteristics



Marking Information

1st line: Company Code (Vs), Company Logo

2nd line: Part Number (280N15M)

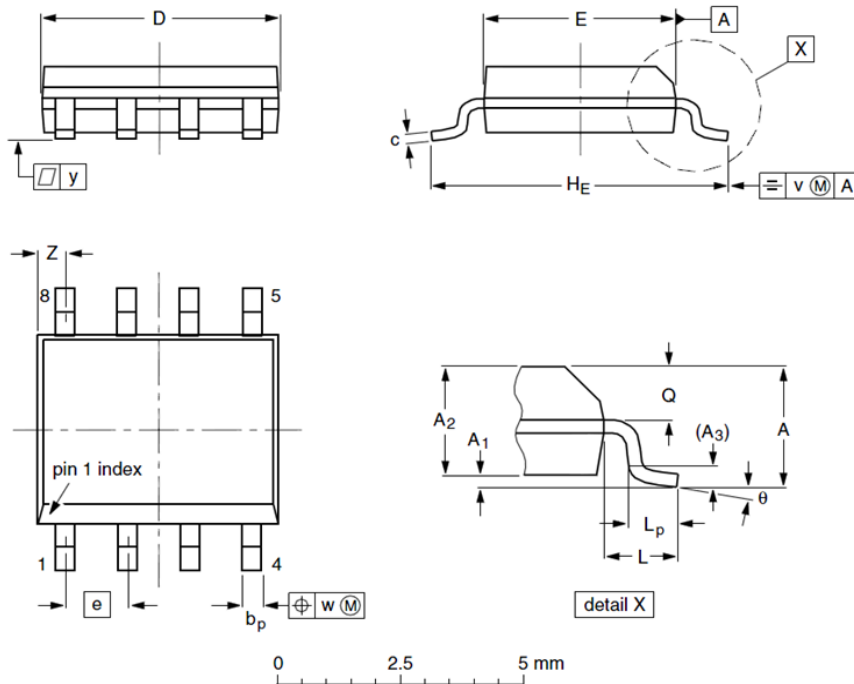
3rd line: Date code (XXXYWW)

XXX: Wafer Lot Number

Y: Year Code, e.g. E means 2017

WW: Week Code

SOP8 Package Outline Data



Label	Dimensions (unit: mm)		
	Min	Typ	Max
A	--	--	1.75
A ₁	0.10	0.18	0.25
A ₂	1.25	1.35	1.50
A ₃	--	0.25	--
b _p	0.36	0.42	0.51
c	0.19	0.22	0.25
D	4.80	4.92	5.00
E	3.80	3.90	4.00
e	--	1.27	--
H _E	5.80	6.00	6.20
L	--	1.05	--
L _p	0.40	0.68	1.00
Q	0.60	0.65	0.725
v	--	0.25	--
w	--	0.25	--
y	--	0.10	--
Z	0.30	0.50	0.70
θ	0°		8°

Notes:

1. Follow JEDEC MS-012.
2. Dimension "D" does NOT include mold flash, protrusions or gate burrs. Mold flash, protrusions or gate burrs shall not exceed 0.15mm per side.
3. Dimension "E" does NOT include interlead flash or protrusion. Interlead flash or protrusion shall not exceed 0.25mm per side.
4. Dimension "b_p" does NOT include dambar protrusion. Allowable dambar protrusion shall be 0.1mm total in excess of "b_p" dimension at maximum material condition. The dambar cannot be located on the lower radius of the foot.

Customer Service

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