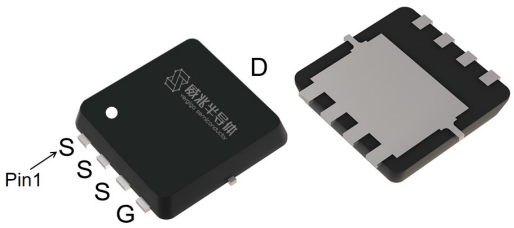
Features

- Enhancement mode
- VitoMOS® Ⅱ Technology
- Fast Switching and High efficiency
- 100% Avalanche Tested,100% Rg Tested

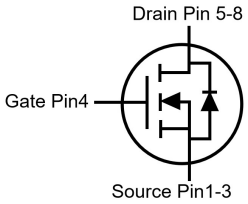
V_{DS}	30	V
$R_{DS(on),TYP}$@ V_{GS}=10 V	9.5	mΩ
$R_{DS(on),TYP}$@ V_{GS}=4.5 V	15	mΩ
$I_{D(Silicon\ Limited)}$	32	A
$I_{D(Package\ Limited)}$	24	A

PDFN3333



Pb-Free RoHS HF Halogen-Free

Part ID	Package Type	Marking	Packing
VS3633GE	PDFN3333	3633GE	5000PCS/Reel



Maximum ratings, at T_A =25°C, unless otherwise specified

Symbol	Parameter		Rating	Unit
$V_{(BR)DSS}$	Drain-Source breakdown voltage		30	V
V_{GS}	Gate-Source voltage		±20	V
I_S	Diode continuous forward current	T_C = 25°C	32	A
I_D	Continuous drain current @VGS=10V (Silicon limited)	T_C = 25°C	32	A
I_D	Continuous drain current @VGS=10V (Silicon limited)	T_C = 100°C	20	A
I_D	Continuous drain current @VGS=10V (Wire bond limited)	T_C = 25°C	24	A
I_{DM}	Pulse drain current tested ①	T_C = 25°C	128	A
I_{DSM}	Continuous drain current @VGS=10V	T_A = 25°C	11	A
		T_A = 70°C	9	A
EAS	Avalanche energy, single pulsed ②		25	mJ
P_D	Maximum power dissipation ③	T_C = 25°C	19	W
		T_C = 100°C	8	W
P_{DSM}	Maximum power dissipation ④	T_A = 25°C	2.3	W
		T_A = 70°C	1.5	W
T_{STG},T_J	Storage and Junction Temperature Range		-55 to 150	°C

Thermal Characteristics

Symbol	Parameter	Typical	Max	Unit
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case ⑤	5.4	6.5	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient ⑥	46	55	°C/W

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	30	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current(T_j=25℃)	V_{DS}=30V,V_{GS}=0V	--	--	1	μA
	Zero Gate Voltage Drain Current(T_j=125℃)⑦	V_{DS}=30V,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	1.2	1.7	2.3	V
$R_{DS(on)}$	Drain-Source On-State Resistance ⑧	V_{GS}=10V, I_D=10A	--	9.5	12	mΩ
		(T_j=100℃)⑦	--	12	--	mΩ
$R_{DS(on)}$	Drain-Source On-State Resistance ⑧	V_{GS}=4.5V, I_D=10A	--	15	20	mΩ
Dynamic Electrical Characteristics @ T_j = 25°C (unless otherwise stated)						
Ciss	Input Capacitance ⑦	V_{DS}=15V,V_{GS}=0V, f=1MHz	--	450	--	pF
Coss	Output Capacitance ⑦		--	300	--	pF
Crss	Reverse Transfer Capacitance ⑦		--	25	--	pF
Rg	Gate Resistance	f=1MHz	--	5.5	--	Ω
Qg(10V)	Total Gate Charge ⑦	V_{DS}=15V,I_D=10A, V_{GS}=10V	--	7.6	--	nC
Qg(4.5V)	Total Gate Charge ⑦		--	3.6	--	nC
Qgs	Gate-Source Charge ⑦		--	1.7	--	nC
Qgd	Gate-Drain Charge ⑦		--	1	--	nC
Switching Characteristics ⑦						
Td(on)	Turn-on Delay Time	V_{DD}=15V, I_D=10A, R_G=3Ω, V_{GS}=10V	--	4.2	--	ns
Tr	Turn-on Rise Time		--	34	--	ns
Td(off)	Turn-Off Delay Time		--	12	--	ns
Tf	Turn-Off Fall Time		--	8.2	--	ns
Source- Drain Diode Characteristics@ T_j = 25°C (unless otherwise stated)						
V_{SD}	Forward on voltage	I_{SD}=10A,V_{GS}=0V	--	0.8	1.2	V
Trr	Reverse Recovery Time ⑦	I_{sd}=10A, V_{GS}=0V di/dt=100A/μs	--	9.5	--	ns
Qrr	Reverse Recovery Charge ⑦		--	1.5	--	nC

NOTE:

① Single pulse; pulse width ≤ 100μs.

② EAS of 25mJ is based on starting T_J = 25°C, L = 0.5mH, R_G = 25Ω, I_{AS} = 10A, V_{GS} =10V； 100% FT tested at L = 0.5mH, I_{AS} = 5A.

③ The power dissipation Pd is based on Tj(max), using junction-to-case thermal resistance RθJC.

④ The power dissipation Pdsm is based on Tj(max), using junction-to-ambient thermal resistance RθJA.

⑤ Thermal resistance from junction to soldering point (on the exposed drain pad).

⑥ These tests are performed with the device mounted on 1 in2 FR-4 board with 2oz. Copper, in a still air environment with TA=25°C.

⑦ Guaranteed by design, not subject to production testing.

⑧ Pulse width ≤ 380μs; duty cycle≤ 2%.

Typical Characteristics

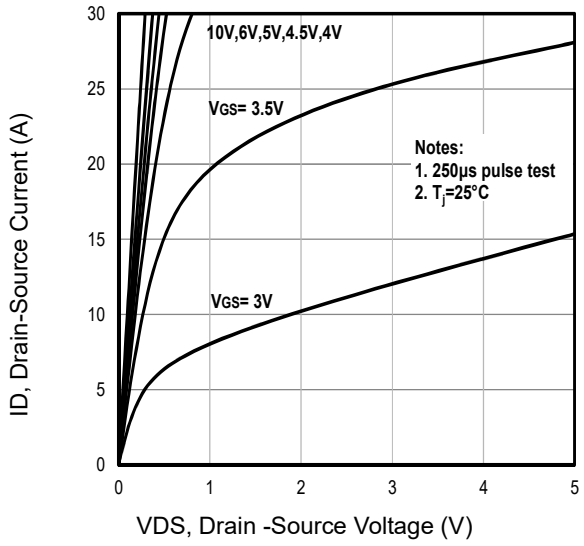


Fig1. Typical Output Characteristics

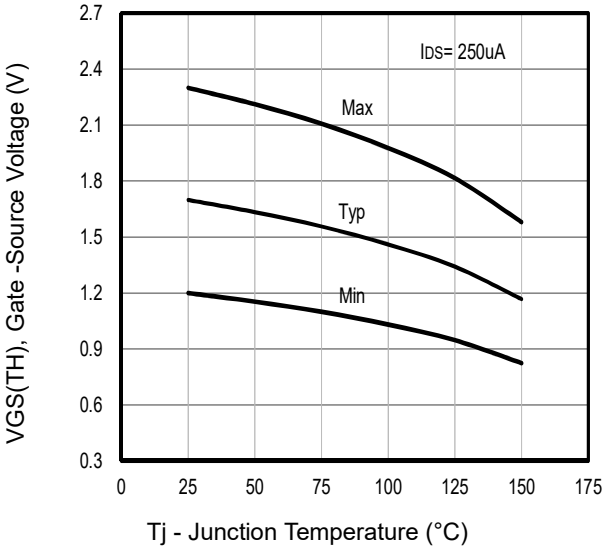


Fig2. Typical $V_{GS(TH)}$ Gate -Source Voltage Vs. Tj

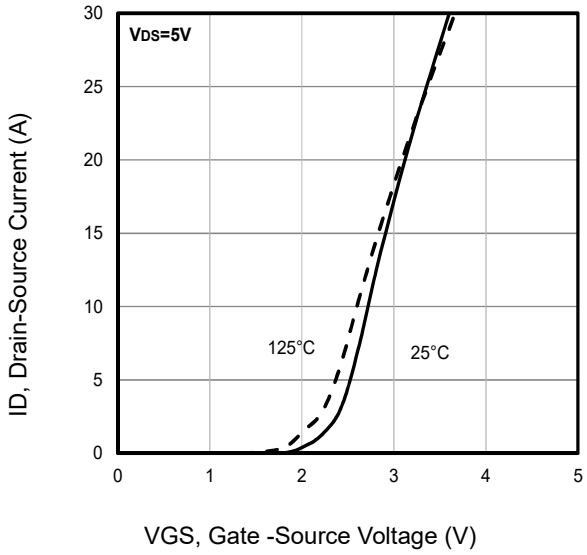


Fig3. Typical Transfer Characteristics

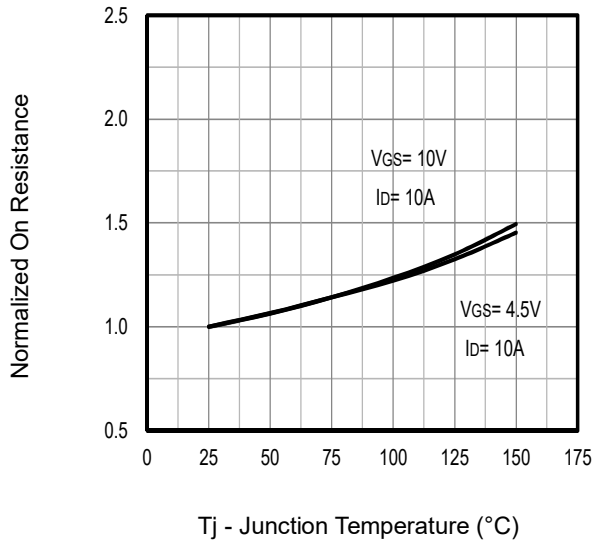


Fig4. Typical Normalized On-Resistance Vs. Tj

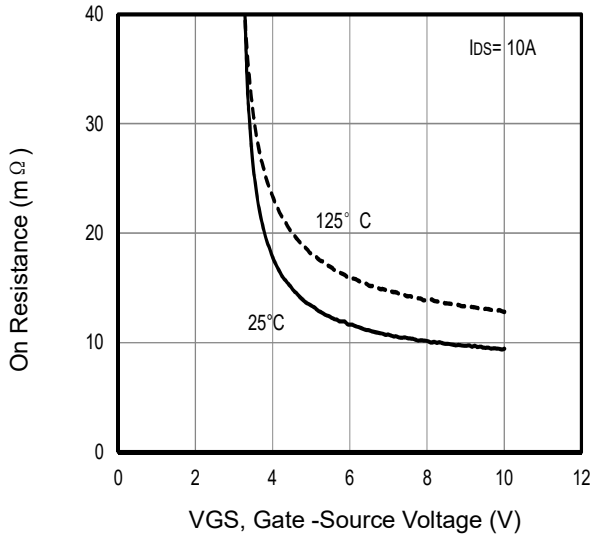


Fig5. Typical On Resistance Vs Gate -Source Voltage

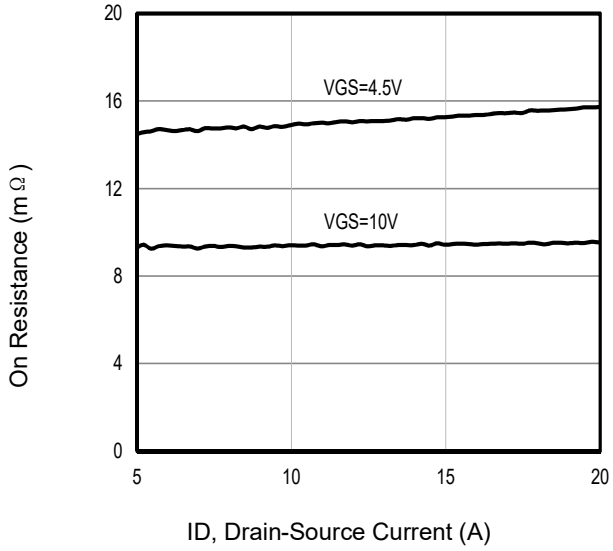


Fig6. Typical On Resistance Vs Drain Current

Typical Characteristics

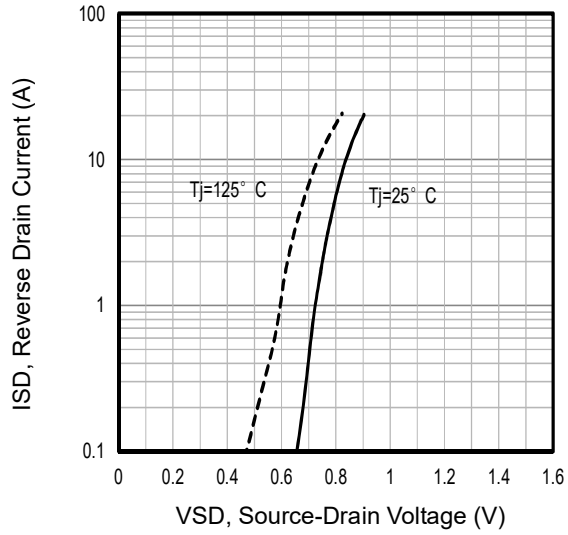


Fig7. Typical Source-Drain Diode Forward Voltage

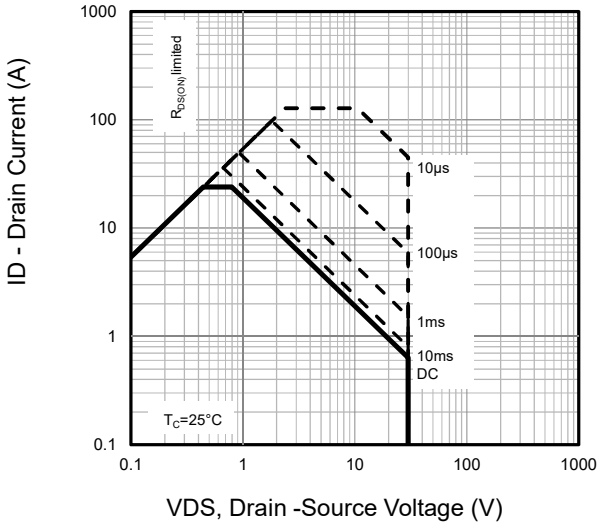


Fig8. Maximum Safe Operating Area

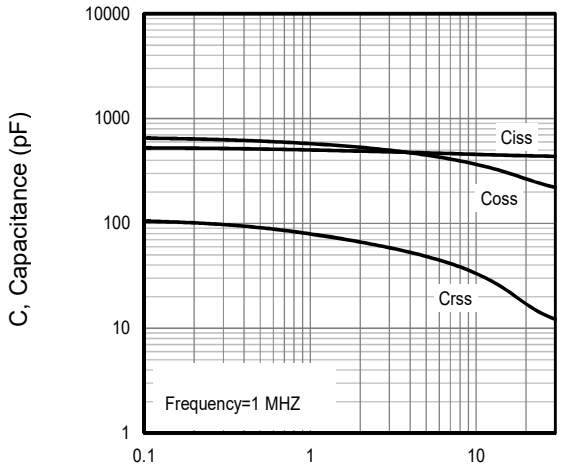


Fig9. Typical Capacitance Vs. Drain-Source Voltage

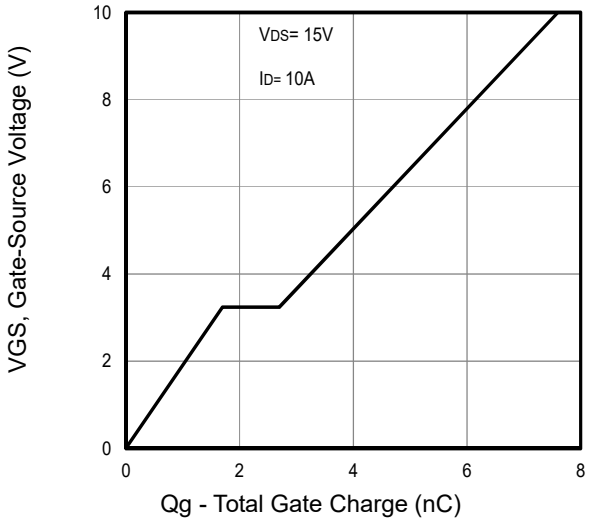


Fig10. Typical Gate Charge Vs. Gate-Source Voltage

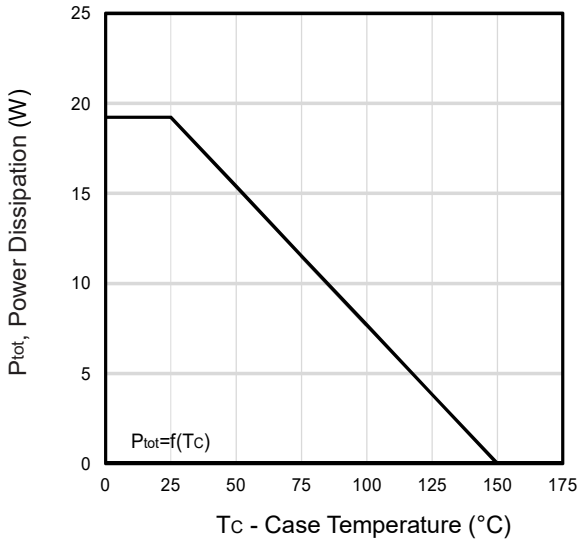


Fig11. Power Dissipation Vs. Case Temperature

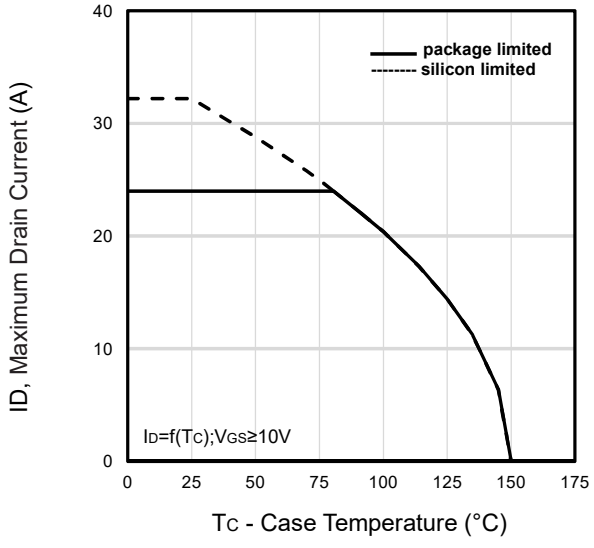


Fig12. Maximum Drain Current Vs. Case Temperature

Typical Characteristics

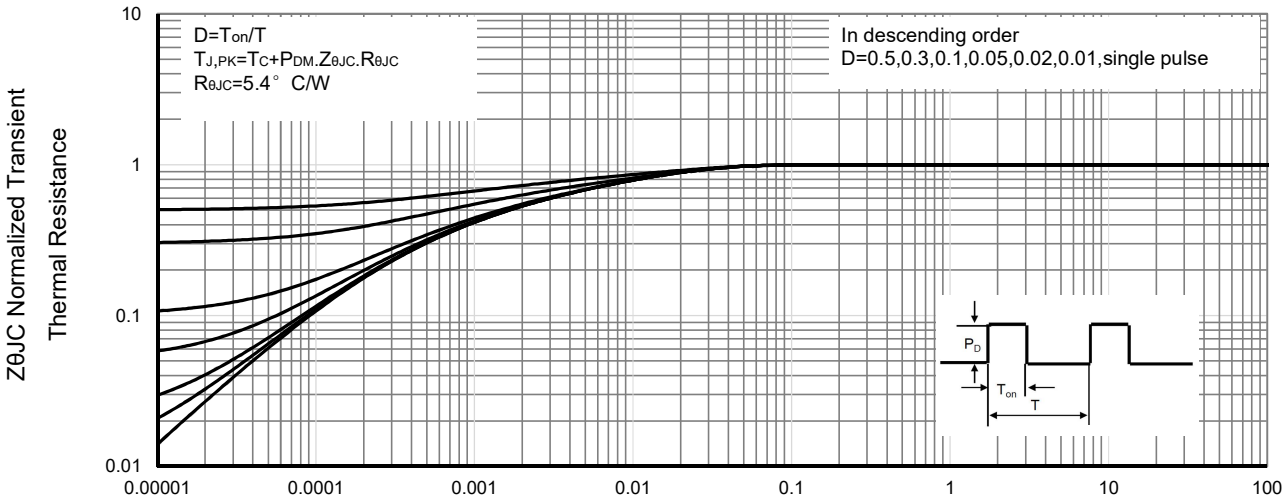


Fig13 . Normalized Maximum Transient Thermal Impedance

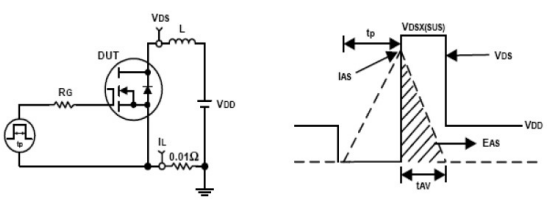


Fig14. Unclamped Inductive Test Circuit and waveforms

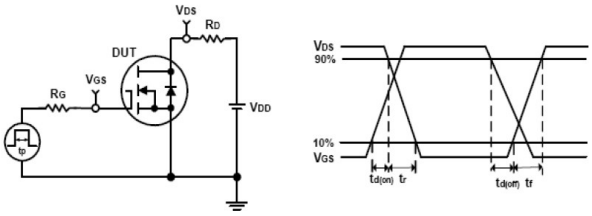
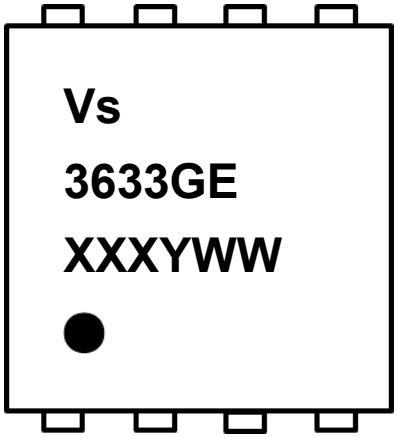


Fig15. Switching Time Test Circuit and waveforms

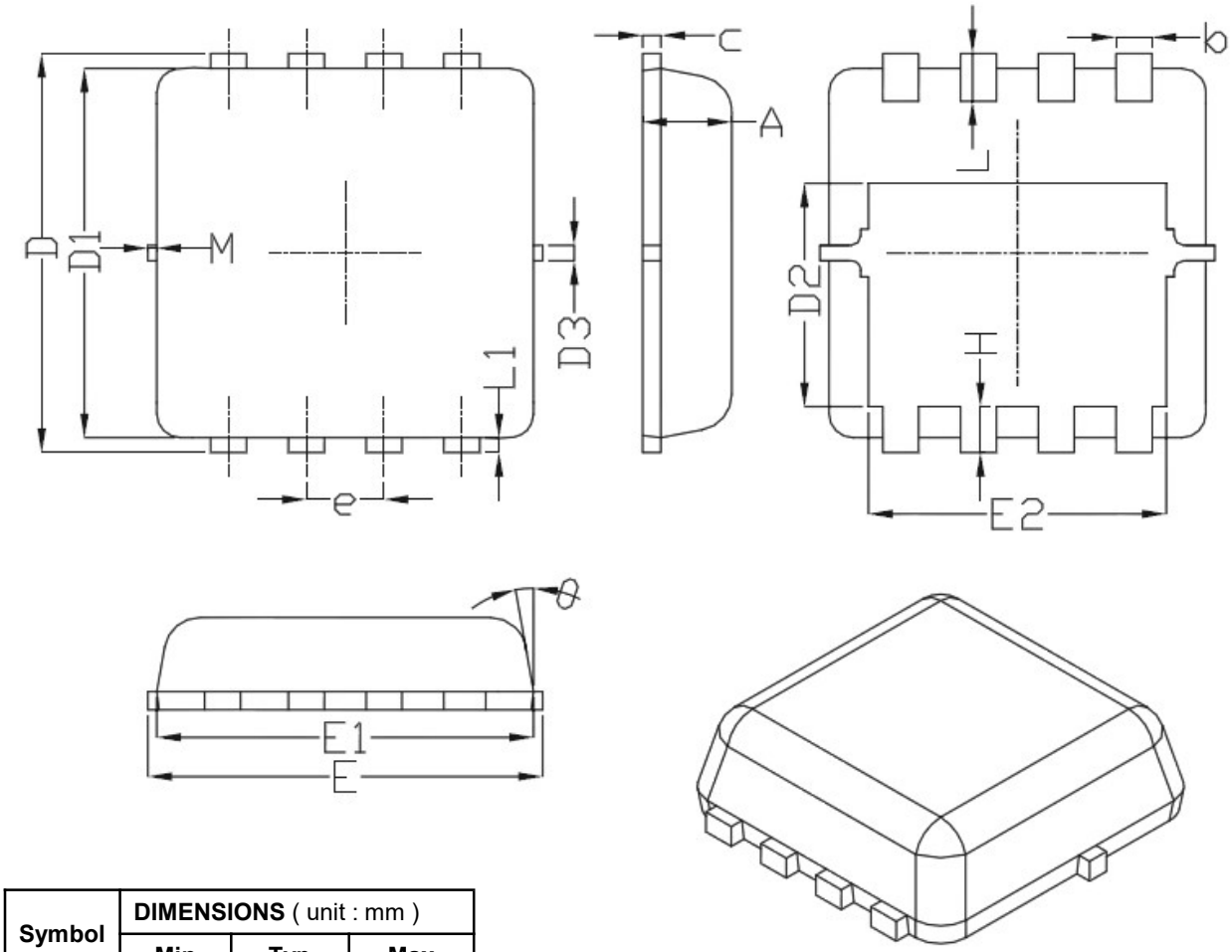
Marking Information



1st line: Vergiga Code（Vs）
2nd line: Part Number（3633GE）
3rd line: Date code （XXXYWW）
XXX: Wafer Lot Number Code , code changed with Lot Number
Y: Year Code , refer to table below
WW: Week Code (01 to 53)

Code	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030

PDFN3333 Package Outline Data



Symbol	DIMENSIONS (unit : mm)		
	Min	Typ	Max
A	0.70	0.75	0.80
b	0.25	0.30	0.35
C	0.10	0.15	0.25
D	3.25	3.35	3.45
D1	3.00	3.10	3.20
D2	1.78	1.88	1.98
D3	--	0.13	--
E	3.00	3.20	3.40
E1	3.00	3.10	3.20
E2	2.39	2.49	2.59
e	0.65 BSC		
H	0.30	0.39	0.50
L	0.30	0.40	0.50
L1	--	0.13	--
θ	--	10°	12°
M	*	*	0.15
* Not specified			

Notes:

1. Follow JEDEC MO-240 variation CA.
2. Dimensions "D1" and "E1" do NOT include mold flash protrusions or gate burrs.
3. Dimensions "D1" and "E1" include interterminal flash or protrusion. Interterminal flash or protrusion shall not exceed 0.25mm per side.

Customer Service

Sales and Service:
sales@vgsemi.com

Vergiga Semiconductor CO., LTD
TEL: (86-755) -26902410
FAX: (86-755) -26907027
WEB: www.vgsemi.com

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET ***category:***

Click to view products by Vanguard ***manufacturer:***

Other Similar products are found below :

614233C 648584F IRFD120 IRFF430 JANTX2N5237 2N7000 FCA20N60_F109 FDZ595PZ AOD464 2SK2267(Q) 2SK2545(Q,T) 405094E 423220D MIC4420CM-TR VN1206L 614234A 715780A SSM6J414TU,LF(T 751625C PSMN4R2-30MLD TK31J60W5,S1VQ(O 2SK2614(TE16L1,Q) DMN1017UCP3-7 EFC2J004NUZTDG FCAB21350L1 P85W28HP2F-7071 DMN1053UCP4-7 NTE2384 NTE2969 NTE6400A DMN2080UCB4-7 DMN61D9UWQ-13 US6M2GTR DMN31D5UDJ-7 SSM6P54TU,LF DMP22D4UFO-7B IPS60R3K4CEAKMA1 DMN1006UCA6-7 DMN16M9UCA6-7 STF5N65M6 STU5N65M6 C3M0021120D DMN13M9UCA6-7 BSS340NWH6327XTSA1 MCM3400A-TP DMTH10H4M6SPS-13 IRF40SC240ARMA1 IPS60R1K0PFD7SAKMA1 IPS60R360PFD7SAKMA1 IPS60R600PFD7SAKMA1