

Description:

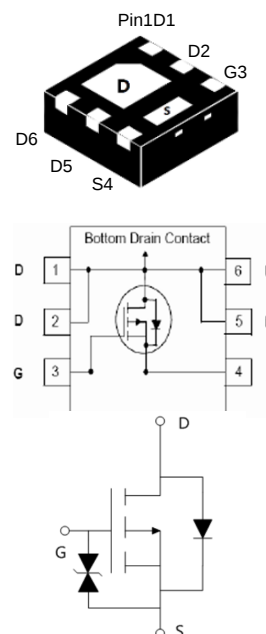
This P-Channel MOSFET uses advanced trench technology and

design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.

Features:

- 1) $V_{DS}=-30V, I_D=-7A, R_{DS(on)}<35m\Omega @V_{GS}=-10V$ (Typ: $25m\Omega$)
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra low $R_{DS(on)}$.
- 5) Excellent package for good heat dissipation.
- 6) ESD Protection
- 7) MSL3



Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
R3035E	3035E	DFN2*2-6	3000 pcs/Reel

Absolute Maximum Ratings: ($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_A=25^\circ\text{C}^1$	-7	A
	Continuous Drain Current- $T_A=100^\circ\text{C}^1$	-4.9	
I_{DM}	Pulsed Drain Current ²	-28	
E_{AS}	Single pulse avalanche energy ³	10	mJ
P_D	Power Dissipation	2	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+150	$^\circ\text{C}$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C}/\text{W}$

Electrical Characteristics: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	-30	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =-30V	---	---	-1	μ A
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 20V, V _{DS} =0A	---	---	± 10	μ A
On Characteristics						
V _{GS(th)}	Gate-Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μ A	-1	-1.8	-2.5	V
R _{DS(ON)}	Drain-Source On Resistance ³	V _{GS} =-10V, I _D =-10A	---	25	35	m Ω
		V _{GS} =-4.5V, I _D =-5A	---	35	50	m Ω
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz	---	800	---	pF
C _{oss}	Output Capacitance		---	119	---	
C _{rss}	Reverse Transfer Capacitance		---	107	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DS} =-15V, I _D =-10A, R _{ENG} =3 Ω ,V _{GS} =-10V	---	13	---	ns
t _r	Rise Time		---	40	---	ns
t _{d(off)}	Turn-Off Delay Time		---	50	---	ns
t _f	Fall Time		---	51	---	ns
Q _g	Total Gate Charge	V _{GS} =-10V, V _{DS} =-15V, I _D =-10A	---	48	---	nC
Q _{gs}	Gate-Source Charge		---	6.3	---	nC
Q _{gd}	Gate-Drain “Miller” Charge		---	17	---	nC
Drain-Source Diode Characteristics						
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _{SD} =-4A	---	---	-1.2	V
I _S	Continuous Drain Current	V _D =V _G =0V	---	---	-4.1	A
I _{SM}	Pulsed Drain Current		---	---	-16.6	A

Notes:

1. Computed continuous current assumes the condition of $T_{j,Max}$ while the actual continuous current depends on the thermal & electro-mechanical application board design
2. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
3. EAS condition : $T_J=25^{\circ}C$, $V_{DD}=15V$, $V_G=10V$, $L=0.5mH$
4. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$

Test Circuit

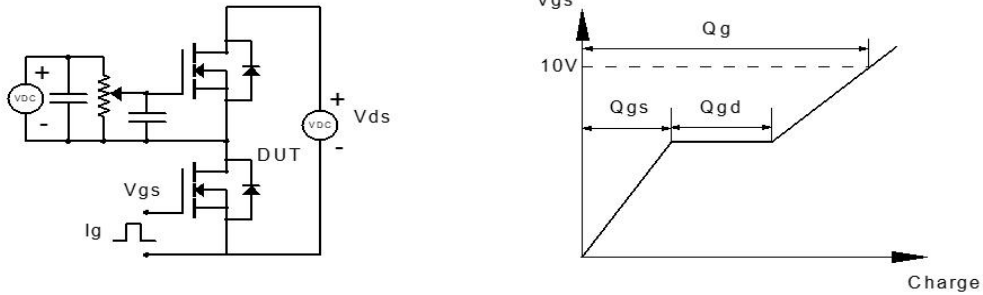


Figure 1: Gate Charge Test Circuit & Waveform

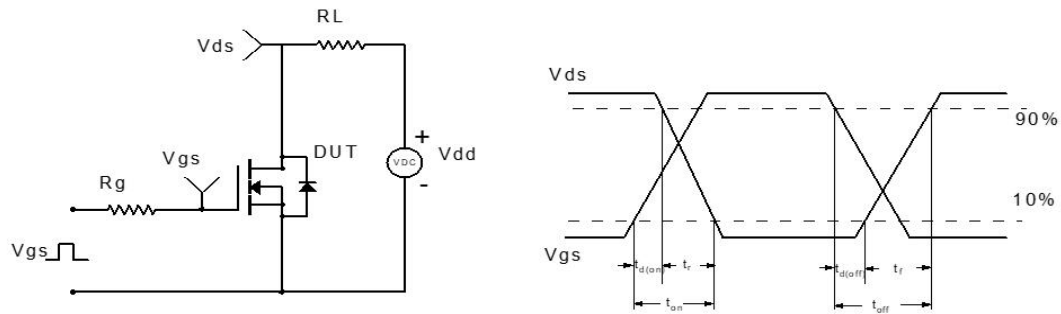


Figure 2: Resistive Switching Test Circuit & Waveform

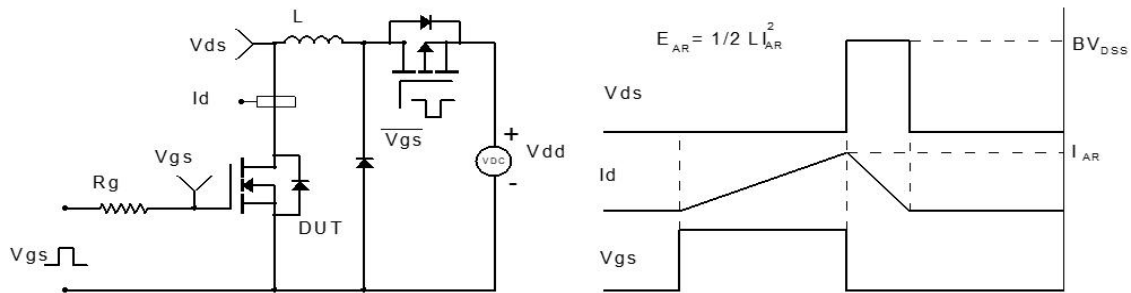


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

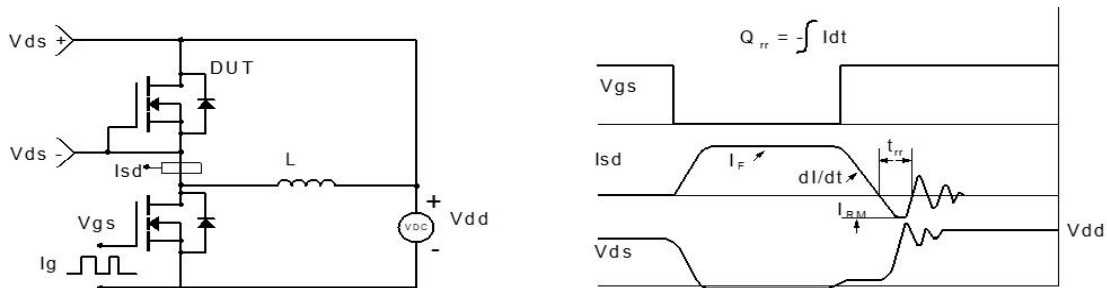
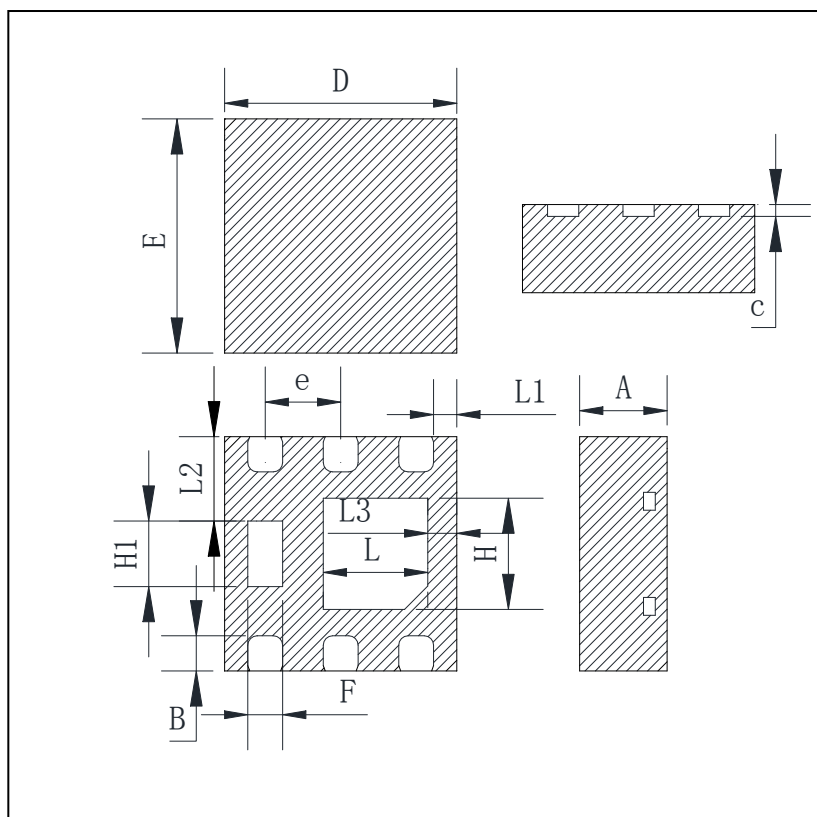


Figure 4: Diode Recovery Test Circuit & Waveform

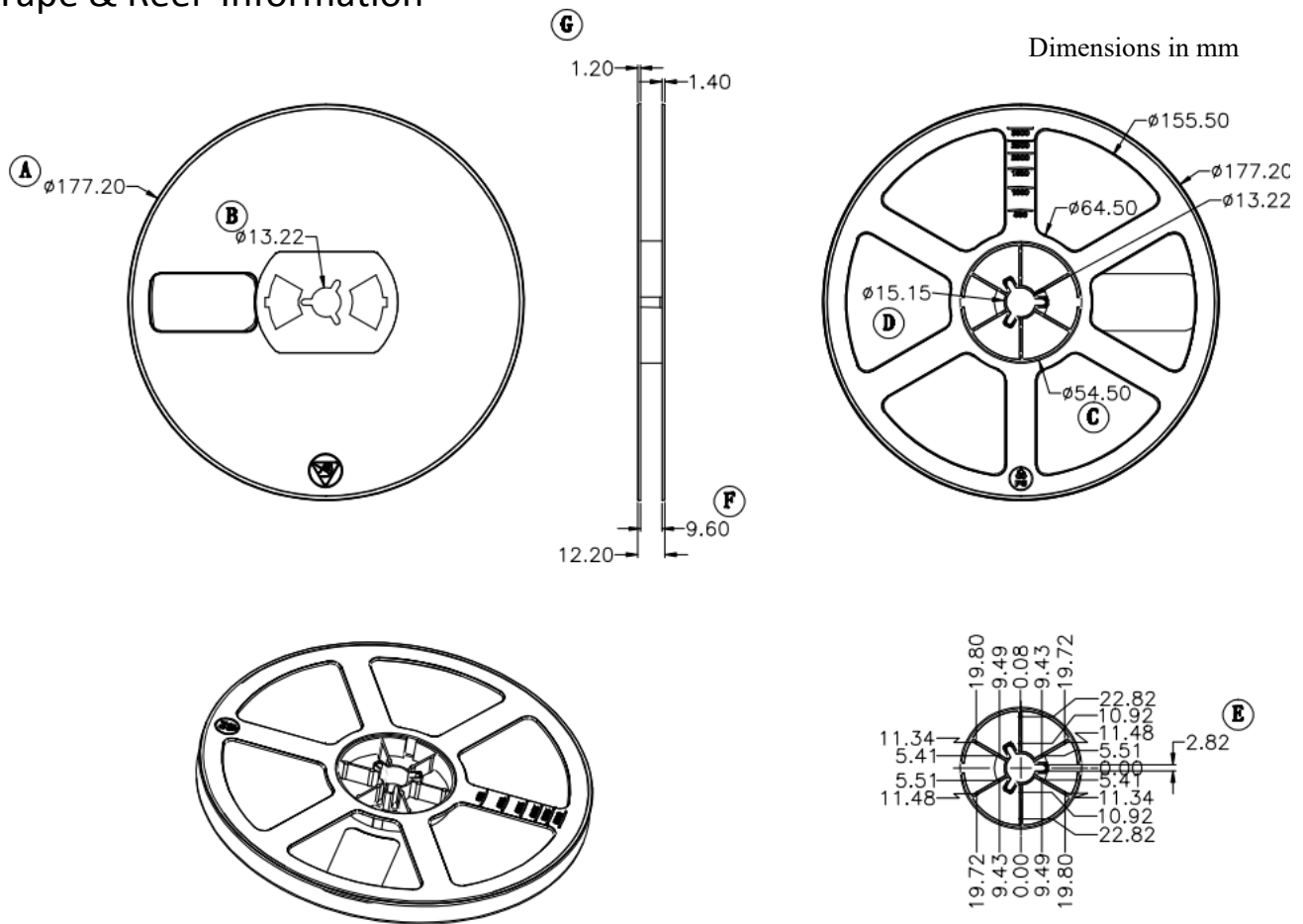
DFN2X2-6 Package Outline Data


Symbol	Min	Typ	Max
A	0.70	0.75	0.80
B	0.25	0.30	0.35
C	0.153	0.203	0.253
D	1.90	2.00	2.10
E	1.90	2.00	2.10
e	0.60	0.65	0.70
F	0.25	0.30	0.35
H	0.90	1.00	1.10
H1	0.50	0.60	0.65
L	0.80	0.90	1.00
L1	0.15	0.20	0.25
L2	0.60	0.70	0.80
L3	0.25	0.30	0.35

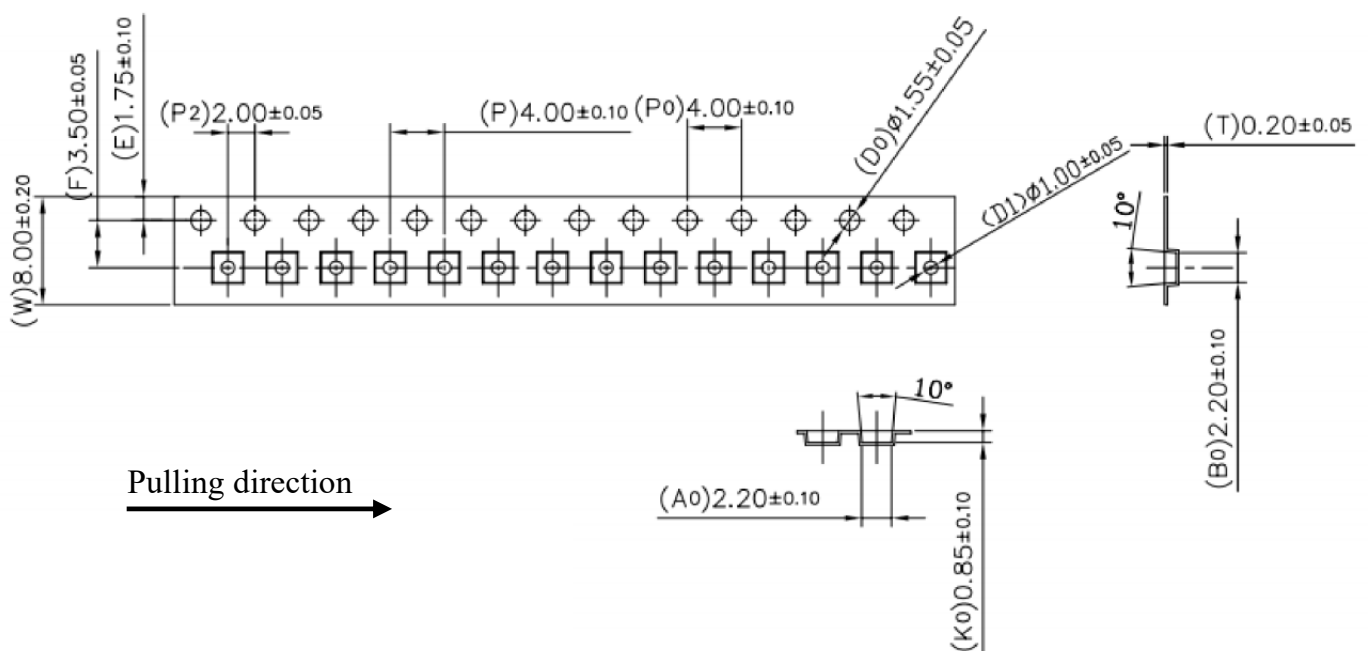
UNIT: mm

Tape & Reel Information

Dimensions in mm



A±1	B±0.3	C±0.2	D±0.2	E±0.2	F±2/-0.3	G±0.2
ø117.2	ø13.2	ø54.5	ø15.15	2.82	9.6	1.2



Marking Information:

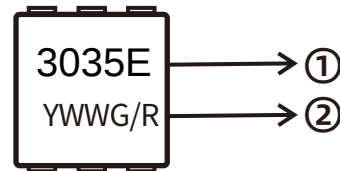
①: Part NO.

②: Date Code (YWWG / R)

Y: Year Code , last digit of the year

WW : Week Code (01-53)

G/R: G(Green) /R(Lead Free)



Previous Version

Version	Date	Subjects (major changes since last revision)
1.1	2026-05-21	Release of final version

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