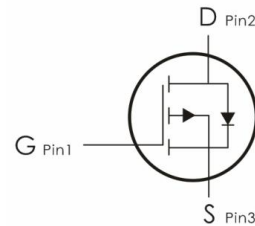
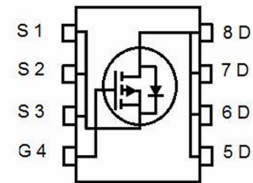
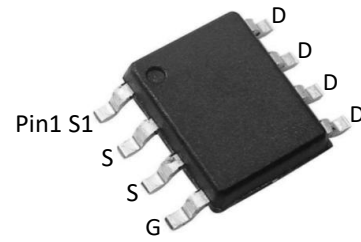


Description:

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) $V_{DS}=-60V, I_D=-6A, R_{DS(ON)}<70m\ \Omega$ @ $V_{GS}=-10V$ (Typ: $60m\ \Omega$)
- 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) MSL3



Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
SE070PG	E070P	SOP-8	3000 pcs/Reel

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

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current ¹	-6	A
	Continuous Drain Current- $T_A=100^\circ\text{C}$ ¹	-4.2	
I_{DM}	Pulsed Drain Current ²	-24	
P_D	Power Dissipation	3.1	W
E_{AS}	Single pulse avalanche energy ³	81	mJ
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	40	$^\circ\text{C}/\text{W}$

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	$V_{GS}=0V, I_D=250\ \mu\text{A}$	-60	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS}=0V, V_{DS}=-60V$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0A$	---	---	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate-Source Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\ \mu\text{A}$	-1	-1.6	-2.5	V
$R_{DS(on)}$	Drain-Source On Resistance ⁴	$V_{GS}=-10V, I_D=-9A$	---	60	70	$\text{m}\Omega$
		$V_{GS}=-4.5V, I_D=-6A$	---	65	90	$\text{m}\Omega$
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=-30V, V_{GS}=0V, f=1\text{MHz}$	---	1700	---	pF
C_{oss}	Output Capacitance		---	72	--	
C_{rss}	Reverse Transfer Capacitance		---	62	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	$V_{DS}=-30V, R_G=3\ \Omega, R_L=3\ \Omega, V_{GS}=-10V$	---	8	---	ns
t_r	Rise Time		---	38	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	66	---	ns
t_f	Fall Time		---	20	---	ns
Q_g	Total Gate Charge	$V_{GS}=-10V, V_{DS}=-30V, I_D=-10A$	---	82	---	nC
Q_{gs}	Gate-Source Charge		---	12.4	---	nC
Q_{gd}	Gate-Drain "Miller" Charge		---	13.4	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_{SD}=-9A$	---	---	-1.2	V
I_S	Continuous Drain Current	$V_D=V_G=0V$	---	---	-5	A
I_{SM}	Pulsed Drain Current		---	---	-20	A
T_{rr}	Reverse Recovery Time	$I_F=-10A, T_J=25^{\circ}\text{C}$	---	24	---	ns
Q_{rr}	Reverse Recovery Charge	$dI/dt=100A/\mu\text{s}$	---	25.2	---	nC

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 : $T_J=25^{\circ}C, V_{DD}=-30V, V_G=-10V, L=0.5mH$
4. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$

Test Circuit

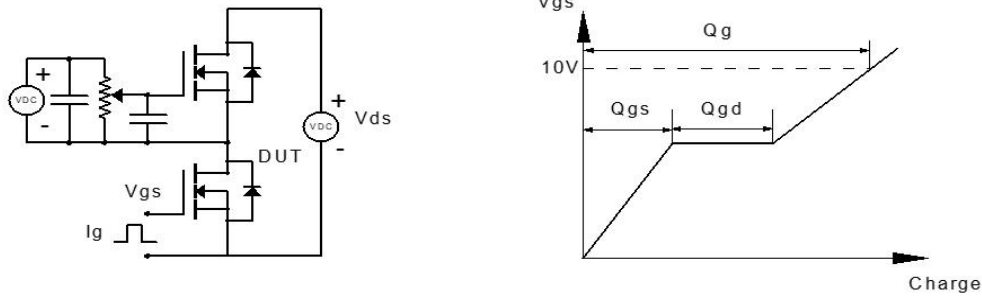


Figure 1: Gate Charge Test Circuit & Waveform

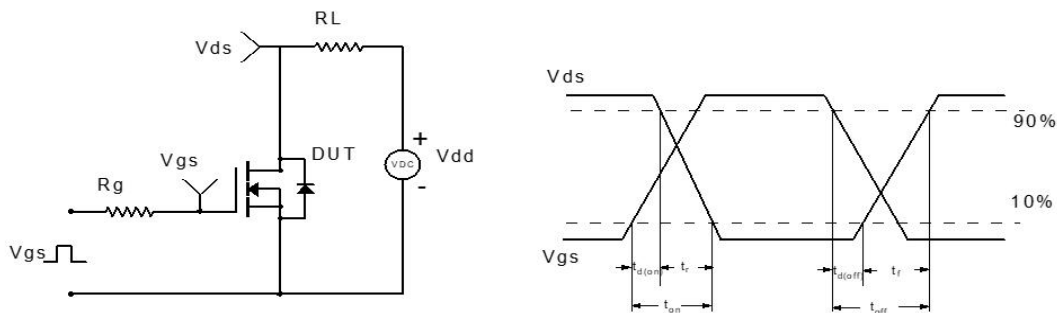


Figure 2: Resistive Switching Test Circuit & Waveform

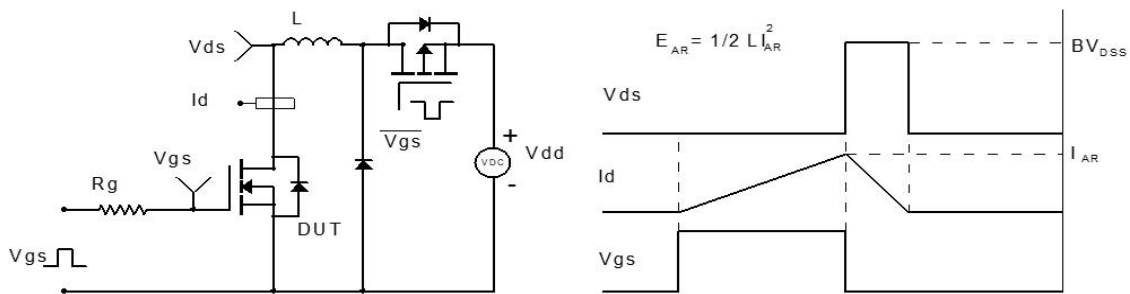


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

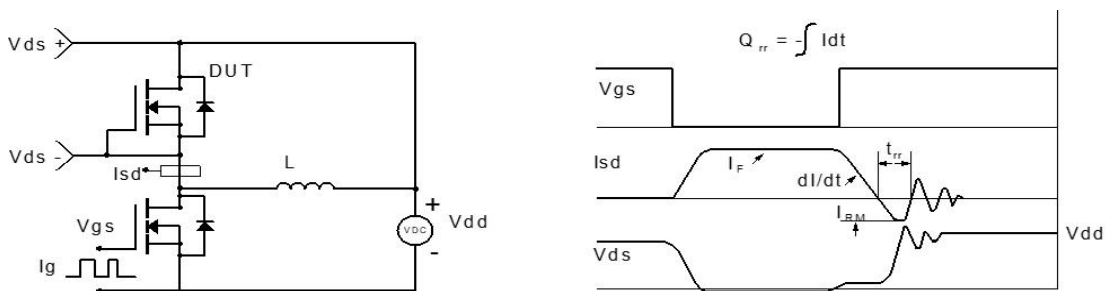
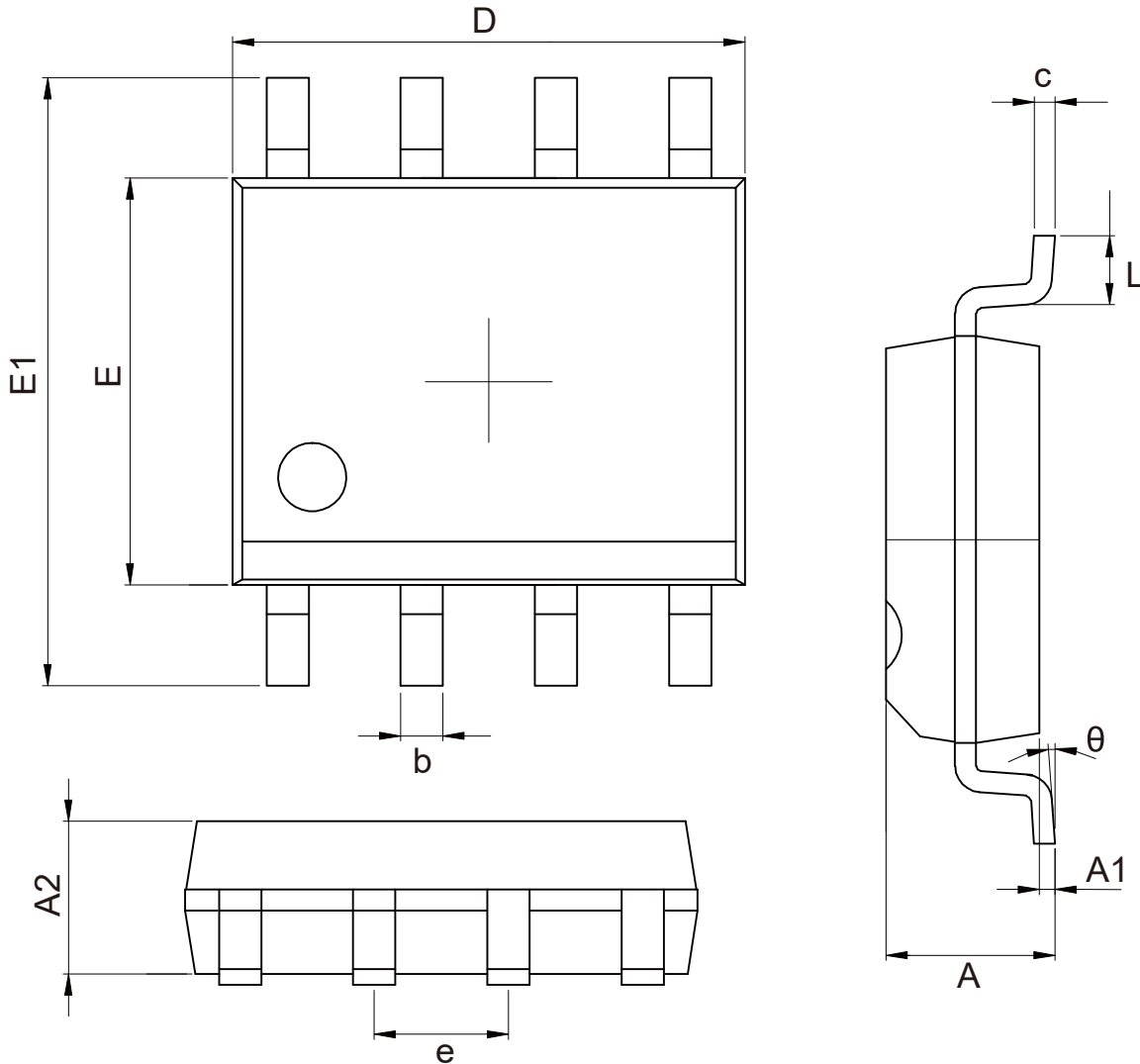


Figure 4: Diode Recovery Test Circuit & Waveform

SOP-8 Package Information:

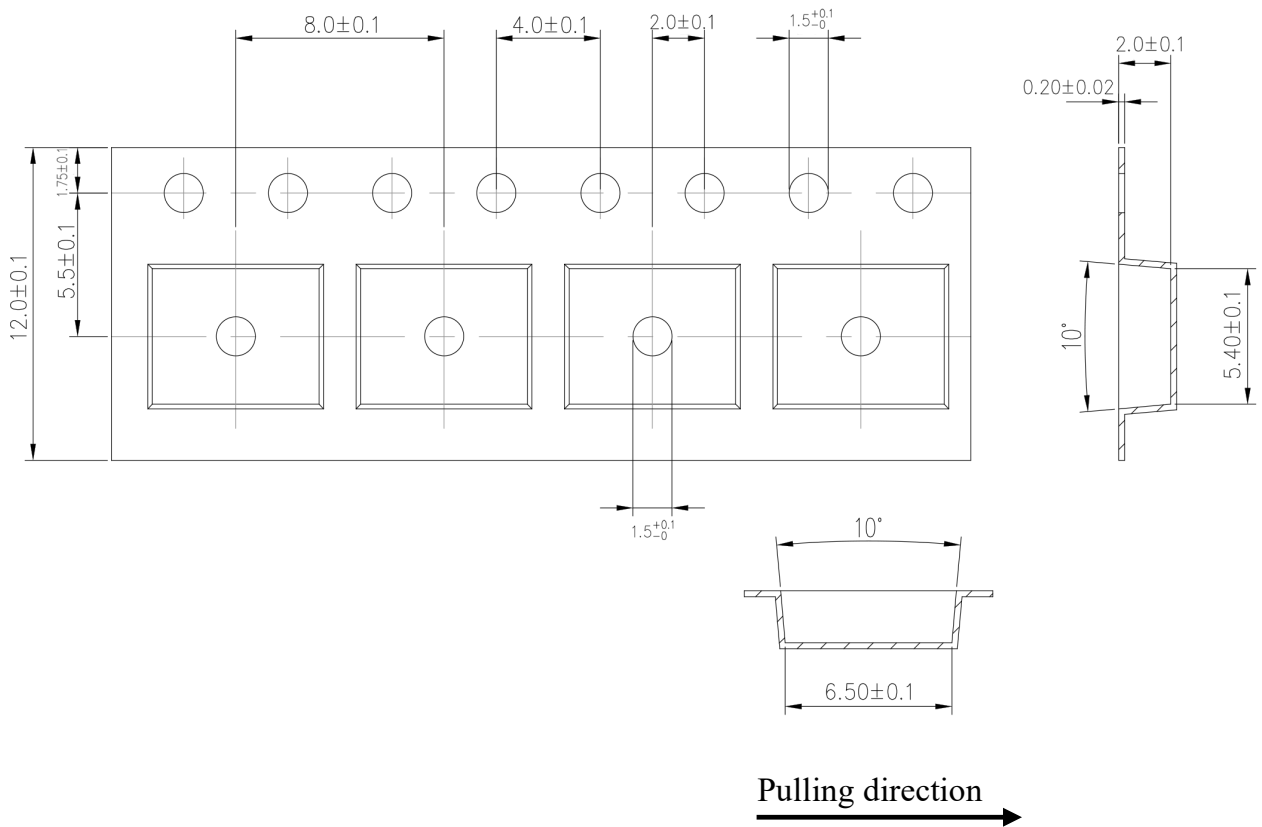
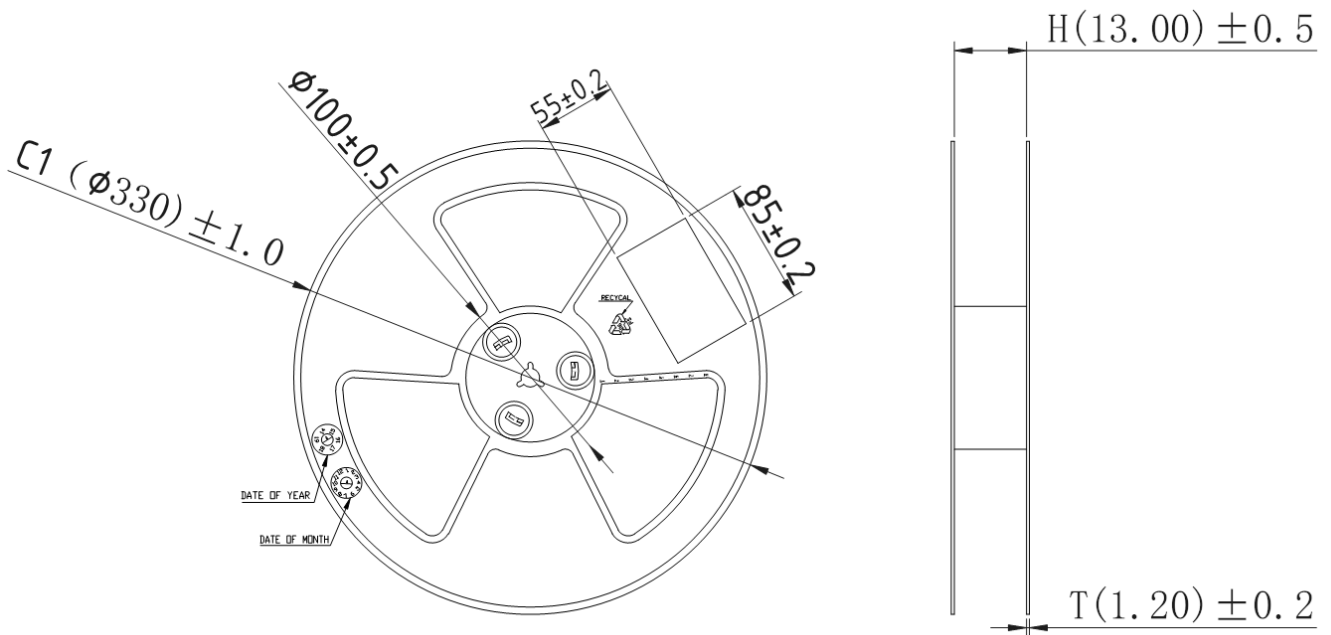


COMMON DIMENSIONS			
UNITS MEASURE=MILLIMETER			
SYMBOL	MIN	NOM	MAX
A	1.350	---	1.750
A1	0.100	---	0.250
A2	1.350	---	1.550
b	0.330	---	0.510
c	0.170	---	0.250
D	4.700	---	5.100
E	3.800	3.900	4.000
E1	5.800	---	6.200
e	1.270BSC		
L	0.400	---	1.270
θ	0°	--	8°

Unit:mm

Tape & Reel Information

Dimensions in mm



Marking Information:

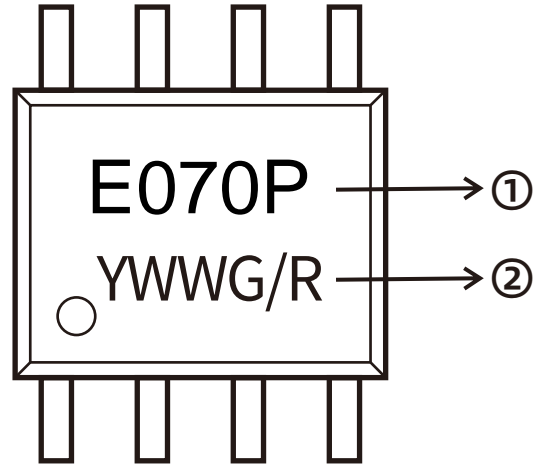
①. Part NO.

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	2025-09-17	Release of final version

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