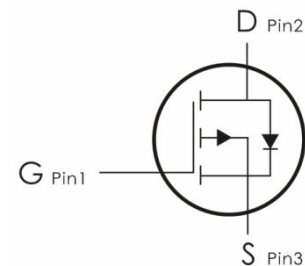
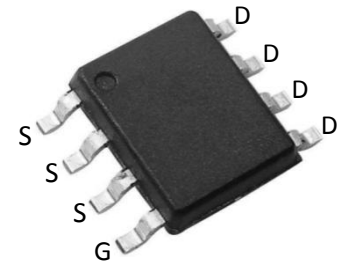


Description:

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) $V_{DS}=-30V, I_D=-16A, R_{DS(ON)}<7.5m\ \Omega @V_{GS}=-10V$
- 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.



Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
SC010PG-K	C010P-K	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	-30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current - $T_A=25^\circ\text{C}$	-16	A
	Continuous Drain Current - $T_A=70^\circ\text{C}$	-10	
I_{DM}	Pulsed Drain Current ¹	-65	
P_D	Power Dissipation	28	W
E_{AS}	Single pulse avalanche energy	121	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	4.46	$^\circ\text{C}/\text{W}$

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	$V_{GS}=0V, I_D=250\ \mu\text{A}$	-30	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS}=0V, V_{DS}=-30V$	---	---	-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	-1.5	-2	V
$R_{DS(ON)}$	Drain-Source On Resistance	$V_{GS}=-10V, I_D=-20A$	---	6.1	7.5	$\text{m}\Omega$
		$V_{GS}=-4.5V, I_D=-20A$	---	8.5	9.5	$\text{m}\Omega$
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=-15V, V_{GS}=0V, f=1\text{MHz}$	---	3150	---	pF
C_{oss}	Output Capacitance		---	358	--	
C_{rss}	Reverse Transfer Capacitance		---	342	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	$V_{DS}=-15V, I_D=-20A,$ $R_L=3\ \Omega, V_{GS}=-10V$	---	10	---	ns
t_r	Rise Time		---	47	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	75	---	ns
t_f	Fall Time		---	44	---	ns
Q_g	Total Gate Charge	$V_{GS}=-10V, V_{DS}=-15V,$ $I_D=-20A$	---	84	---	nc
Q_{gs}	Gate-Source Charge		---	13	---	nc
Q_{gd}	Gate-Drain "Miller" Charge		---	15	---	nc
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_{SD}=-20A$	---	---	-1.2	V
I_S	Continuous Drain Current	$V_D=V_G=0V$	---	---	-16	A
I_{SM}	Pulsed Drain Current		---	---	-65	A

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. EAS condition: $T_J=25^\circ\text{C}, V_{DD}=-30V, V_G=-10V, R_G=25\Omega, L=0.5\text{mH}$.

3. Pulse Test: Pulse Width≤300μs, Duty Cycles≤0.5%

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

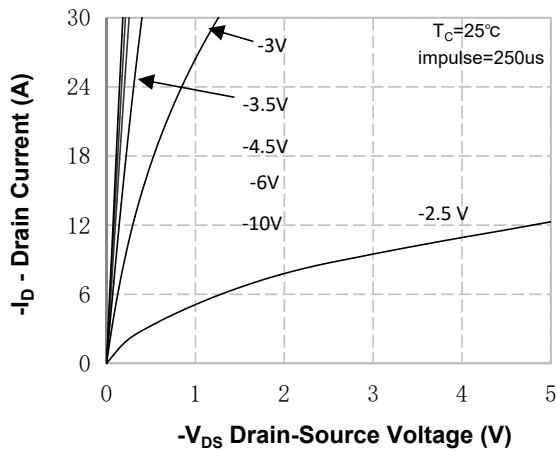


Figure 1. On-Region Characteristics

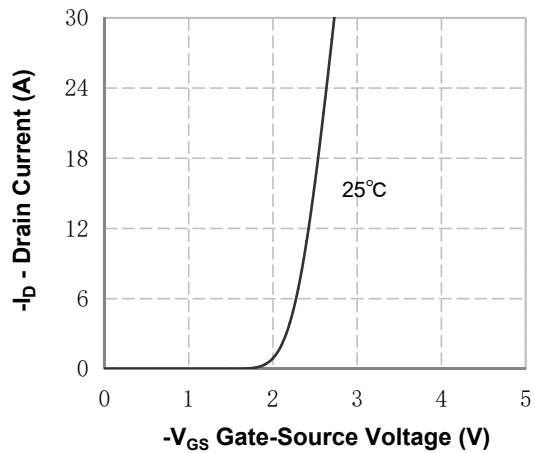


Figure 2. Transfer Characteristics

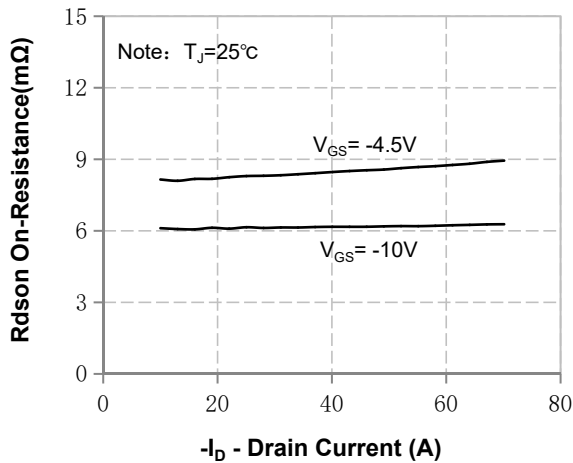


Figure 3. On-Resistance Variation vs Drain Current and Gate Voltage

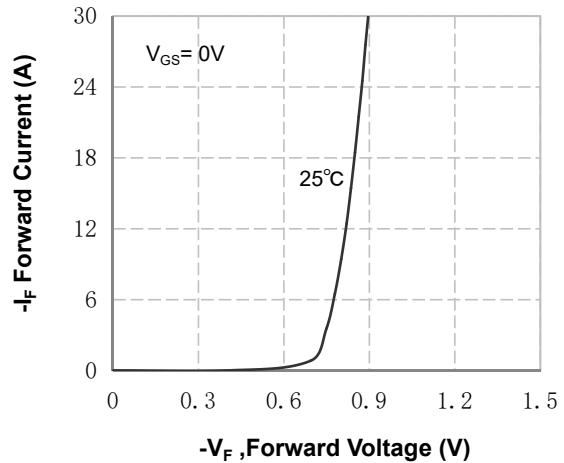


Figure 4. Body Diode Forward Voltage Variation with Source Current

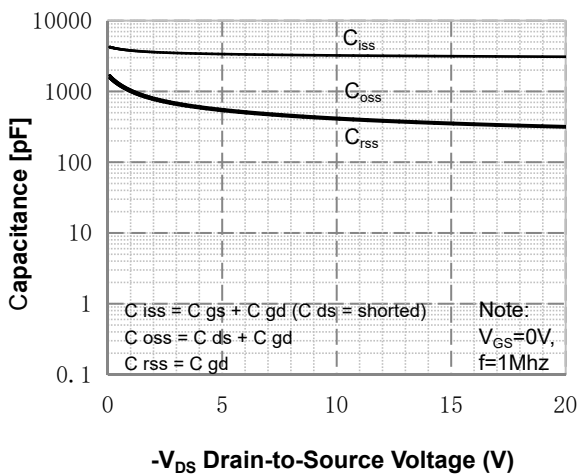


Figure 5. Capacitance Characteristics

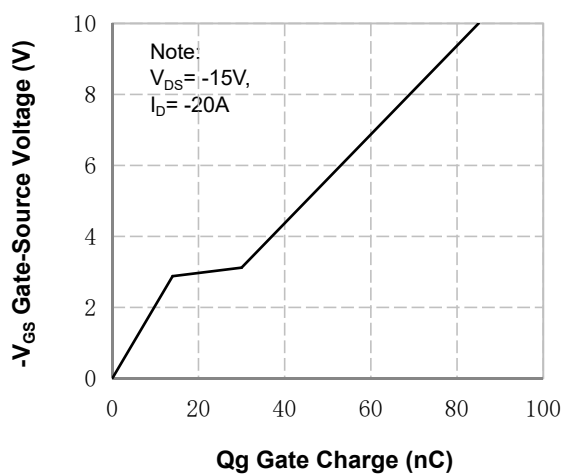


Figure 6. Gate Charge Characteristics

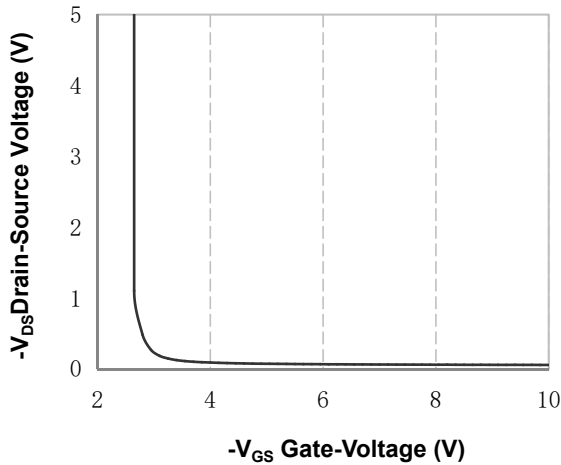


Figure 7. Vds Drain-Source Voltage vs Gate Voltage

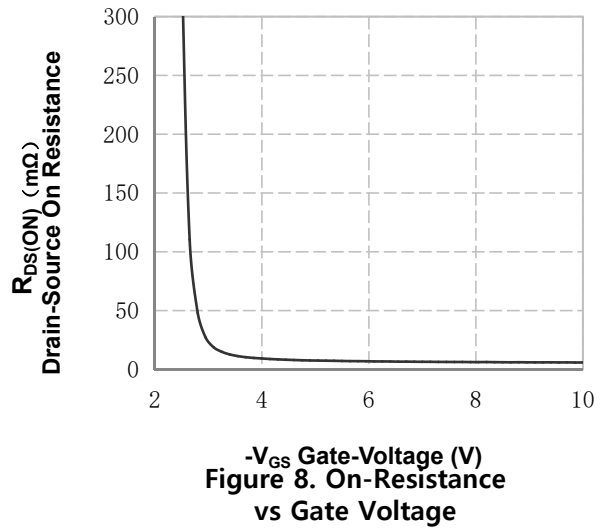


Figure 8. On-Resistance vs Gate Voltage

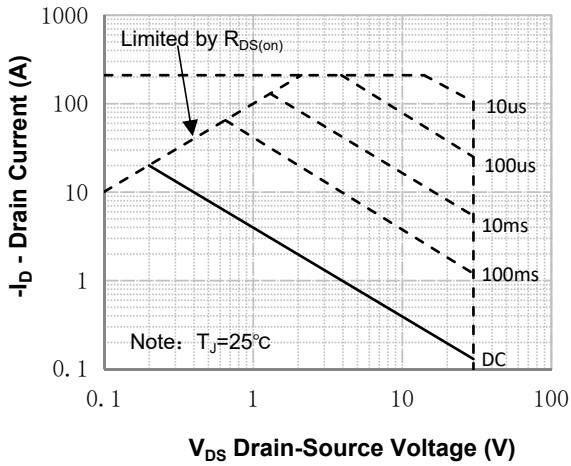


Figure 9. Maximum Safe Operating Area

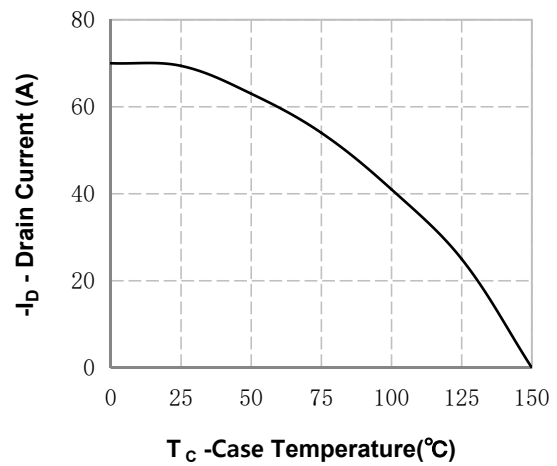


Figure 10. Maximum Continuous Drain Current vs Case Temperature

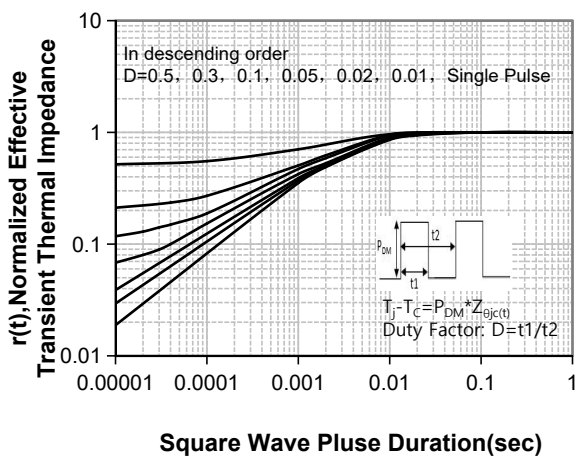
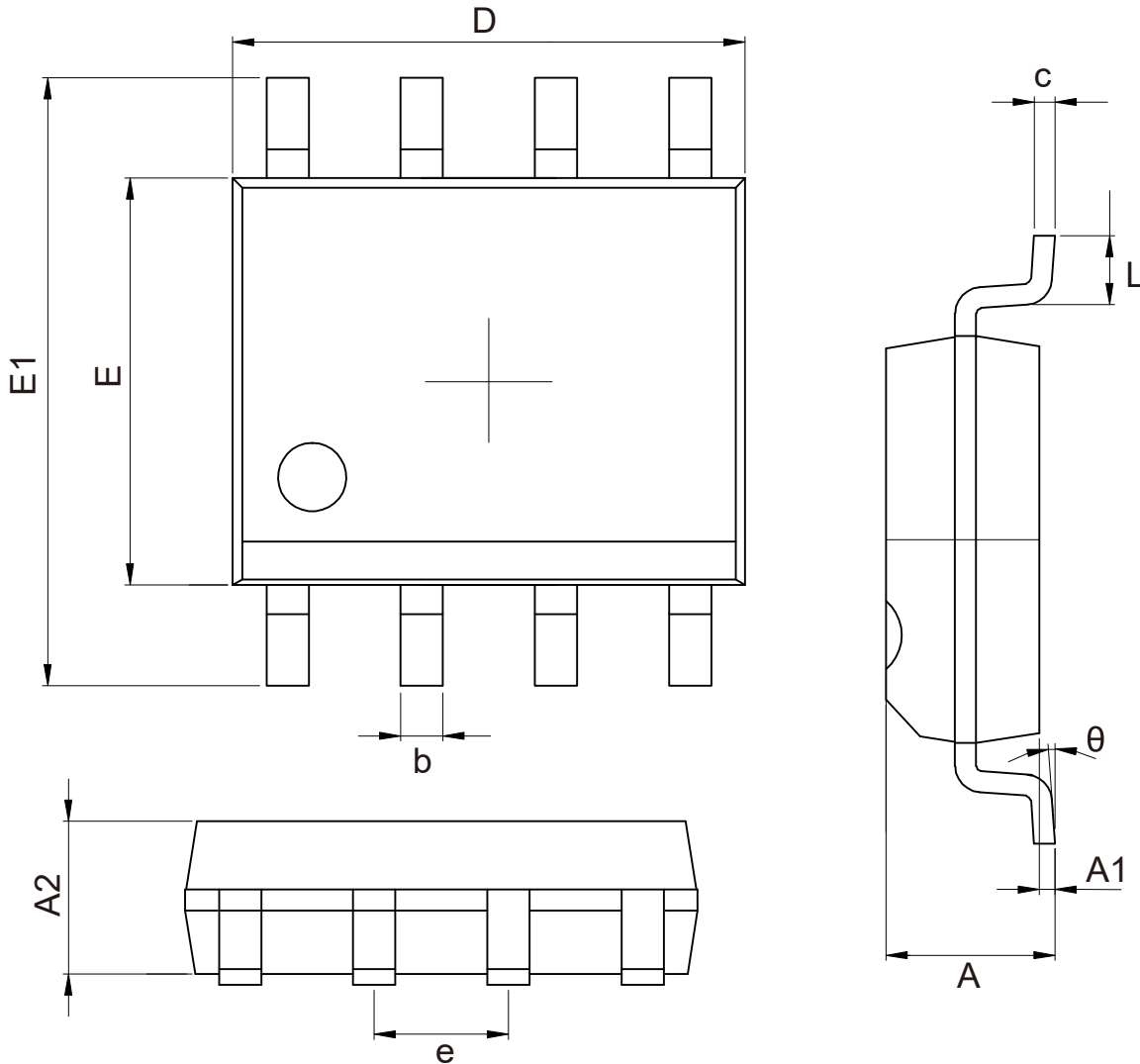


Figure 11. Transient Thermal Response Curve

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

Marking Information:

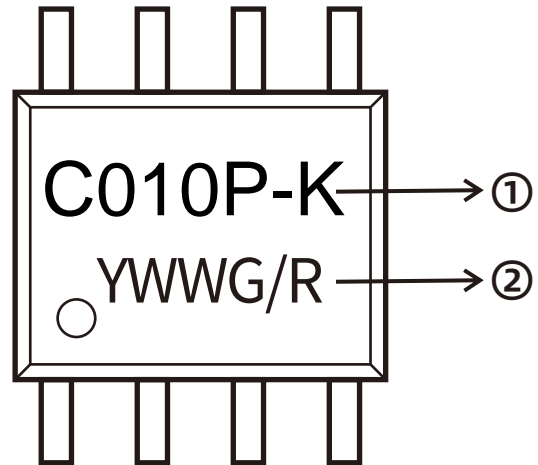
①. Part NO.


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)

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