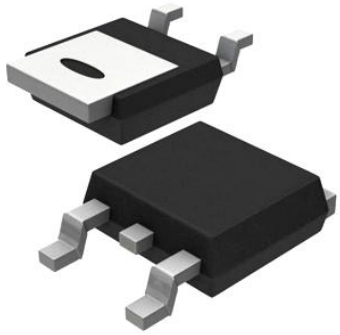
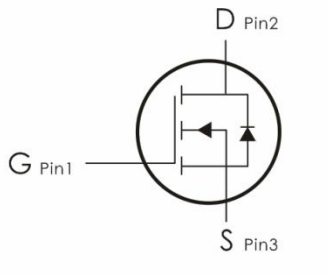
Description：

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}=-40V,I_D=-100A,$R_{DS(ON)}$<5.6mΩ @V_{GS}=-10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity 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
CI100P04	CI100P04	TO- 252	2500 pcs/Reel

Absolute Maximum Ratings： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-40	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Curren	-100	A
	Continuous Drain Current-T_C=100℃	-70	
I_{DM}	Pulsed Drain Current[1]	-396	
P_D	Power Dissipation	107	W
E_{AS}	Single pulse avalanche energy[2]	576	mJ
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+175	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	1.4	℃/W

Electrical Characteristics: (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	-40	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=-40V	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	-1	-1.7	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=-10V,I_D=-20A	---	4.5	5.6	mΩ
		V_{GS}=-4.5V,I_D=-20A	---	6.5	8.3	mΩ
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=-20V, V_{GS}=0V, f=1MHz	---	6637	---	pF
C_{oss}	Output Capacitance		---	544	--	
C_{rss}	Reverse Transfer Capacitance		---	344	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=-20V R_{ENG}=3Ω,V_{GS}=-10V	---	15	---	ns
t_r	Rise Time		---	16	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	67	---	ns
t_f	Fall Time		---	30	---	ns
Q_g	Total Gate Charge	V_{GS}=-10V, V_{DS}=-20V, I_D=-20A	---	117	---	nC
Q_{gs}	Gate-Source Charge		---	12	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	21	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage[3]	V_{GS}=0V, I_{SD}=-20A	---	---	-1.2	V
I_S	Continuous Drain Curren	VD=VG=0V	---	---	-95	A
I_{SM}	Pulsed Drain Current		---	---	-396	A
Trr	Reverse Recovery Time	I_F=-20A,T_J=25℃ dI/dt=100A/us	---	24	---	NS
Qrr	Reverse Recovery Charge		---	140	---	NC

Notes:

1.Repetitive Rating: Pulse width limited by maximum junction temperature.

2.E_{AS} condition: T_J=25℃,V_{DD}=15V,V_G=-10V, Rg=25Ω, L=0.5mH.

3.Repetitive Rating: Pulse width limited by maximum junction temperature

Typical Characteristics: (T_C=25℃ unless otherwise noted)

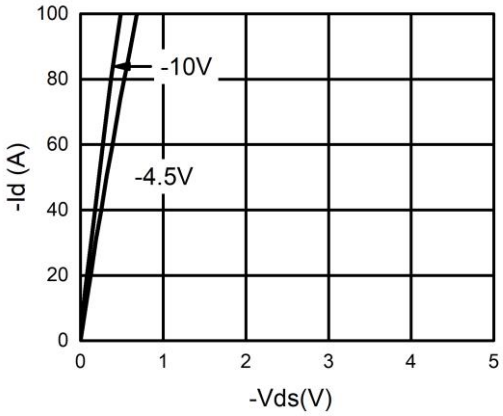


Figure 1. Output Characteristics

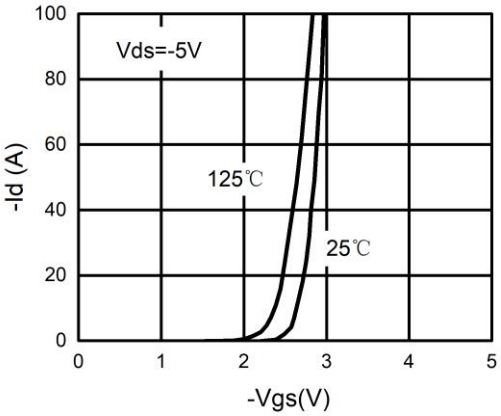


Figure 2. Transfer Characteristics

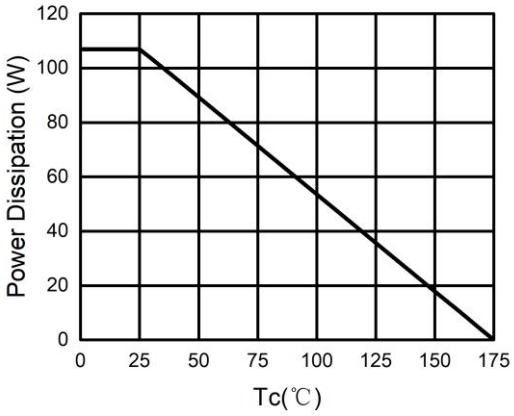


Figure 3. Power Dissipation

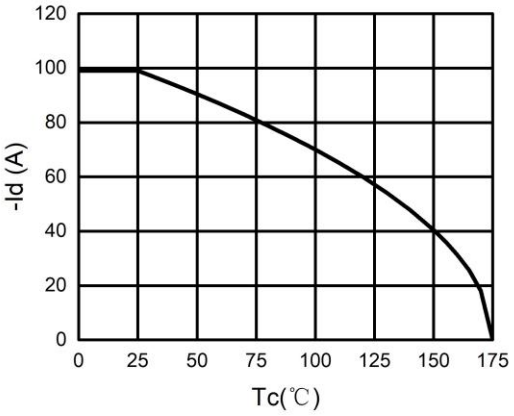


Figure 4. Drain Current

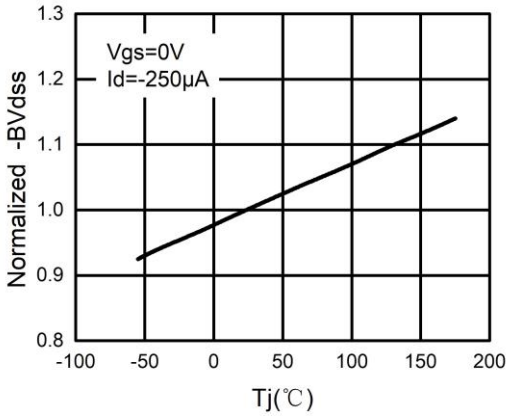


Figure 5. BV_{DSS} vs Junction Temperature

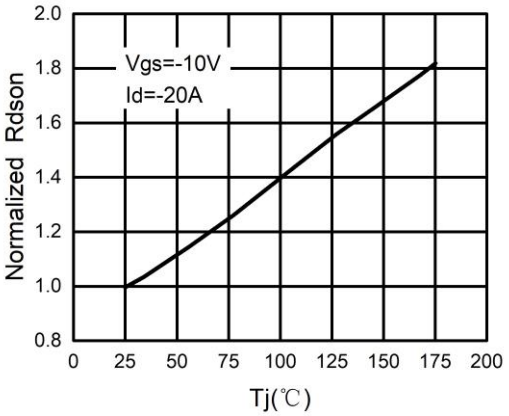


Figure 6. $R_{DS(ON)}$ vs Junction Temperature

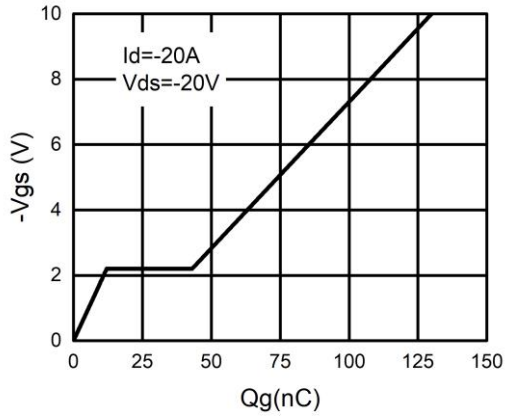


Figure 7. Gate Charge Waveforms

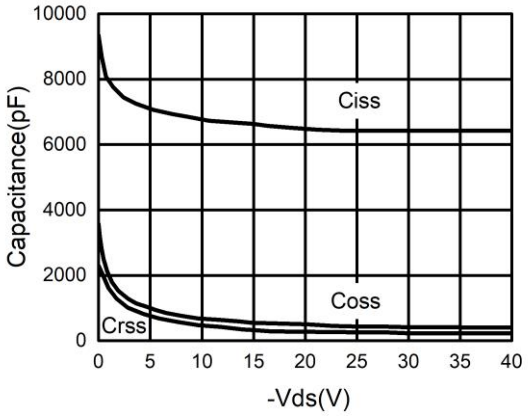


Figure 8. Capacitance

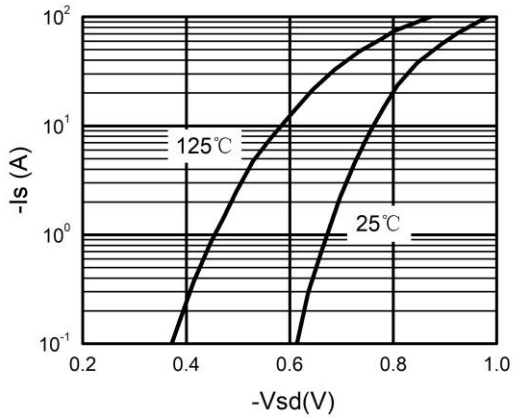


Figure 9. Body-Diode Characteristics

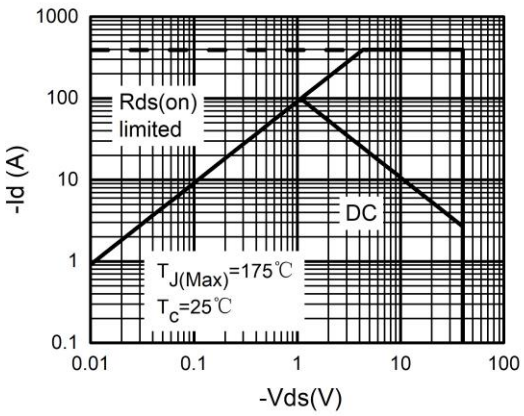


Figure 10. Maximum Safe Operating Area