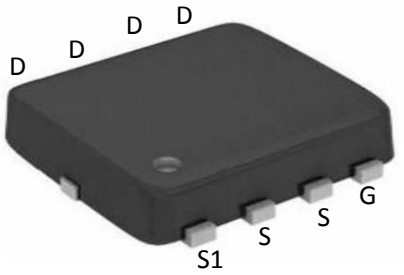
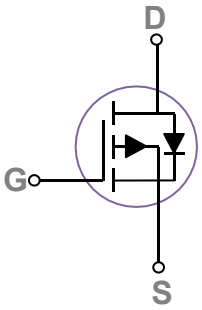
Description：

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=-40A,$R_{DS(ON)}$ <11m Ω @V_{GS}=-10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra low $R_{DS(ON)}$.
   Excellent package for good heat dissipation.

Absolute Maximum Ratings： (T_C=25℃ 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-TC=25℃	-40	A
	Continuous Drain Current-TC=100℃	-32	
I_{DM}	Pulsed Drain Current	-200	
P_D	Power Dissipation-TC=25℃	38	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	3.3	℃/W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	55	℃/W

Package Marking and Ordering Information：

Part NO.	Marking	Package
DOZ40P03	40P03	DFN3*3-8

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	-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}=±25V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	-1	-1.5	-2.0	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=-10V,I_D=-12A	---	8.5	11	mΩ
		V_{GS}=-4.5V,I_D=-7A	---	12	15	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=-15V, V_{GS}=0V, f=1MHz	---	1779	---	pF
C_{oss}	Output Capacitance		---	234	---	
C_{rss}	Reverse Transfer Capacitance		---	199	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=-15V, R_L=1Ω R_{GEN}=3Ω, V_{GS}=-10V,	---	7	---	ns
t_r	Rise Time		---	26	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	68	---	ns
t_f	Fall Time		---	39	---	ns
Q_g	Total Gate Charge	V_{GS}=-10V, V_{DS}=-15V, I_D=-15A	---	45	---	nC
Q_{gs}	Gate-Source Charge		---	1	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	1	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage	V_{GS}=0V,I_S=-1A	---	-0.7	-1	V
Is	Diode Forward Current	VD=VG=0V	---	---	-40	A

Ism	Pulsed Source Current	VD=VG=0V	---	---	-200	A
Trr	Reverse Recovery Time	I_S=-4A ,dI/dt=100A/μs V_{GS}=0V	---	13.5	---	ns
Qrr	Reverse Recovery Charge		---	3.7	---	nC

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

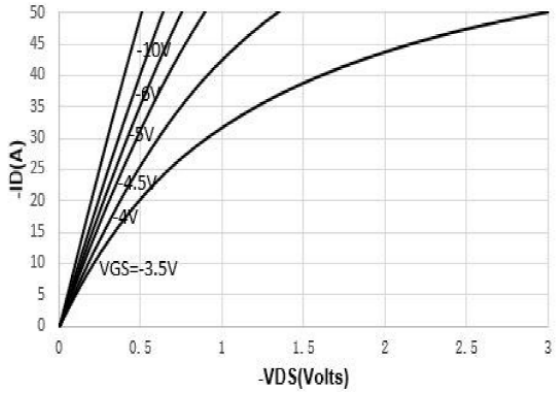


Figure 1. On-Regin Characteristics

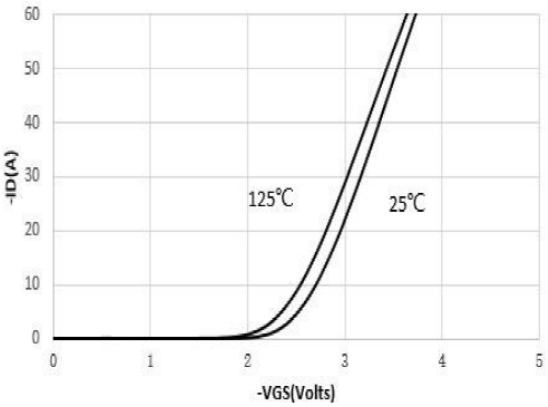


Figure 2. Transfer Characteristics

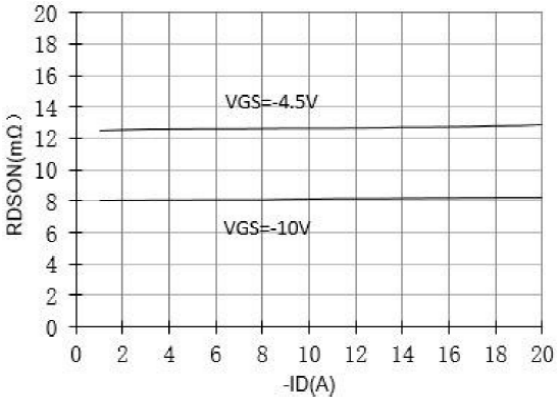


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

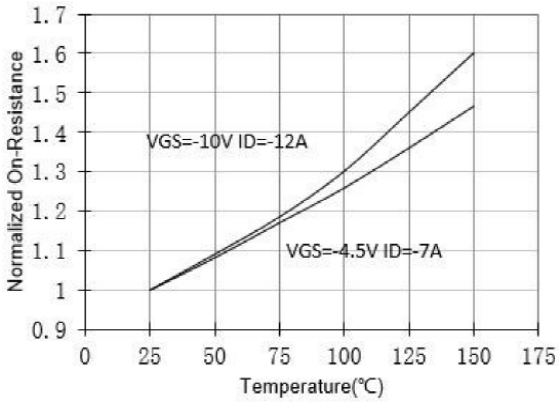


Figure 4. On-Resistance vs. Junction Temperature

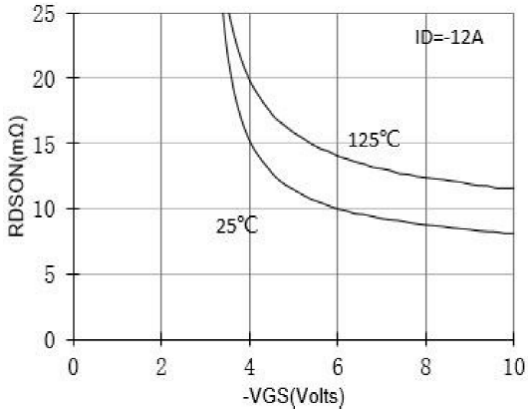


Figure 5. On-Resistance vs. Gate-Source Voltage

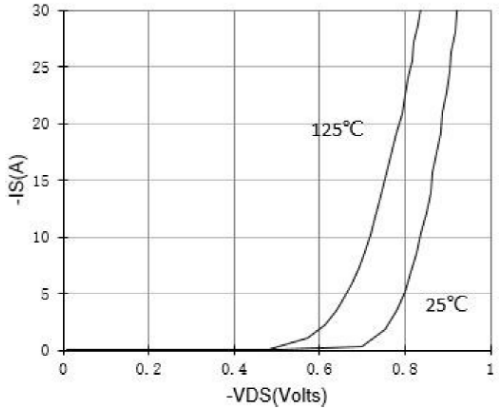


Figure 6. Body-Diode Characteristics

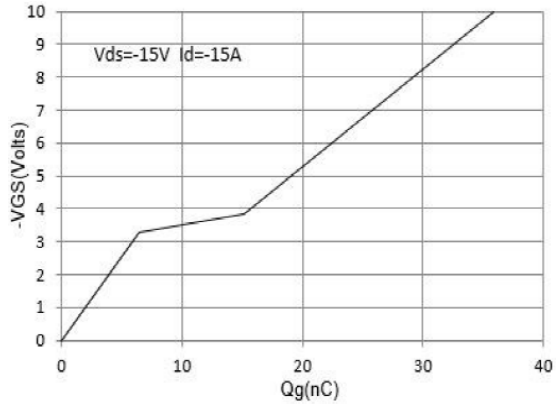


Figure 7. Gate-Charge Characteristics

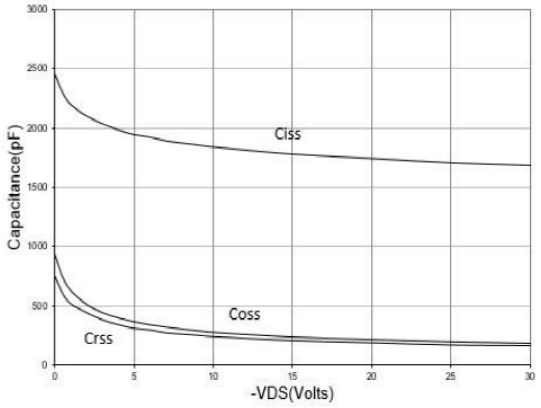


Figure 8. Capacitance Characteristics

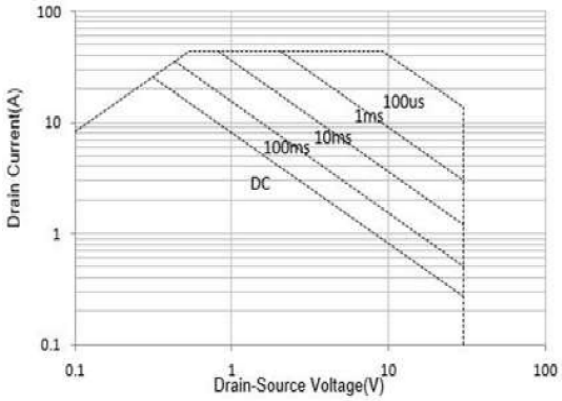


Figure 9. Maximum Forward Biased Safe Operating Area

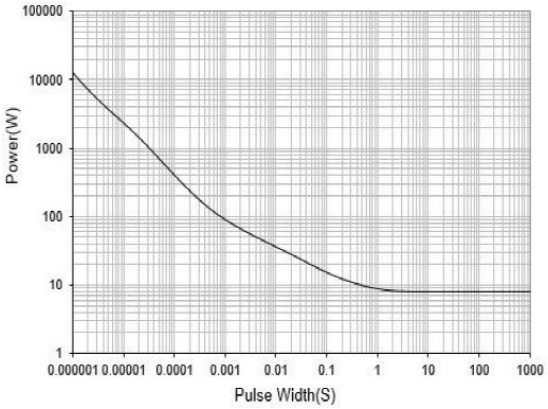


Figure 10. Single Pulse Power Rating Junction-to-Ambient

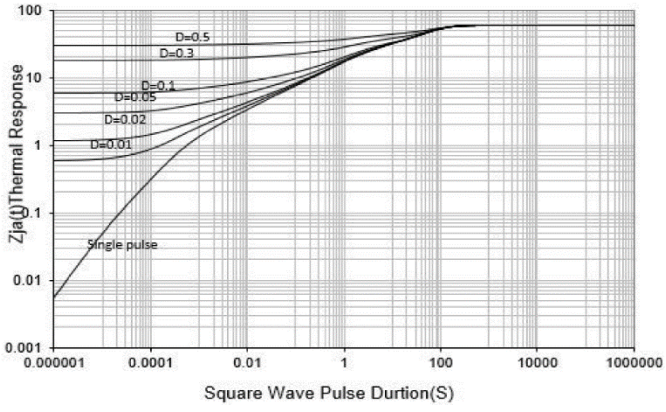


Figure 11. Normalized Maximum Transient Thermal Impedance