Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	6.7mΩ@10V	80A
	8.7mΩ@4.5V	

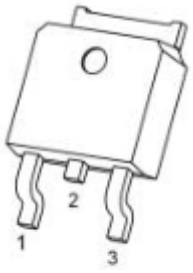
Feature

- Fast Switching
- Low Gate Charge and Rdson
- 100% Single Pulse avalanche energy Test

Application

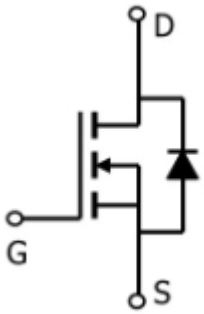
- Power switching application
- DC-DC Converter
- Power Management

Package

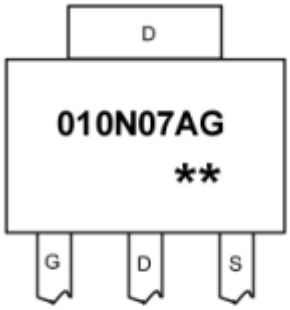


TO-252(G:1 D:2 S:3)

Circuit diagram



Marking



010N07AG : Product code
**** : Week code**

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (T_C =25℃)	I_D	80	A
Pulsed Drain Current[2]	I_{DM}	320	A
Power Dissipation(T_C =25℃)	P_D	100	W
Single Pulse Avalanche Energy[1]	E_{AS}	358	mJ
Thermal Resistance Junction-Case	$R_{\theta JC}$	1.25	℃/ W
Operation and storage temperature	T_{STG}, T_J	-55~ +150	℃

Electrical characteristics

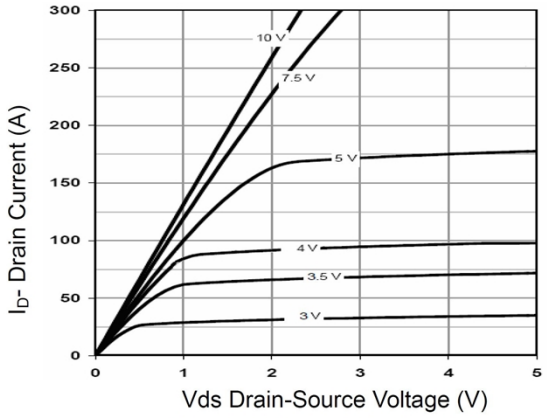
(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS} = 0V, I_D =250μA	100			V
Drain-Source Leakage Current	I_{DSS}	V_{DS} =80V, V_{GS} = 0V			1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±0.1	uA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1	1.7	2.5	V
Drain-Source on-Resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =30A		6.7	8.5	mΩ
		V_{GS} =4.5V, I_D =25A		8.7	12	
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS}=50V,V_{GS}=0V, f=1MHz		1942		pF
Output Capacitance	C_{oss}			388		
Reverse Transfer Capacitance	C_{rss}			12		
Switching Characteristics						
Total Gate Charge (4.5V)	Q_g	V_{DS}=50V, V_{GS}=10V, I_D=30A		67		nC
Gate-Source Charge	Q_{gS}			12		
Gate-Drain Charge	Q_{gd}			21		
Turn-On Delay Time	$T_{d(on)}$	V_{GS}=10V, V_{DS}=50V, R_L=2.5Ω, R_G=6Ω		12		nS
Rise Time	T_r			11		
Turn-Off Delay Time	$T_{d(off)}$			42		
Fall Time	T_f			6		
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=1A			1.2	V

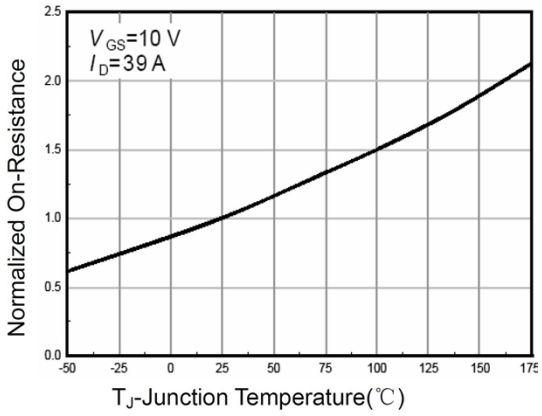
Notes:

1 E AS is tested at starting T_j = 25℃, V_{DD} =50V,V_{GS} = 10V,L = 0.5mH, Rg=25 mΩ;

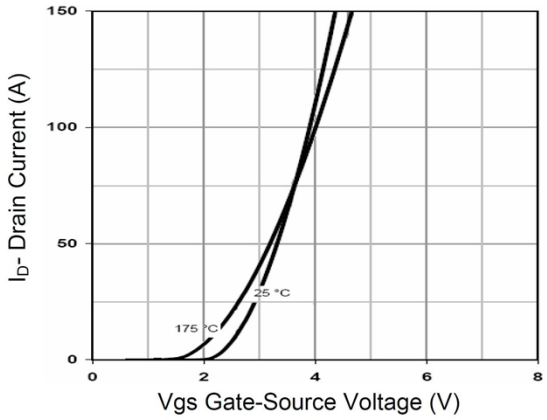
Typical Characteristics



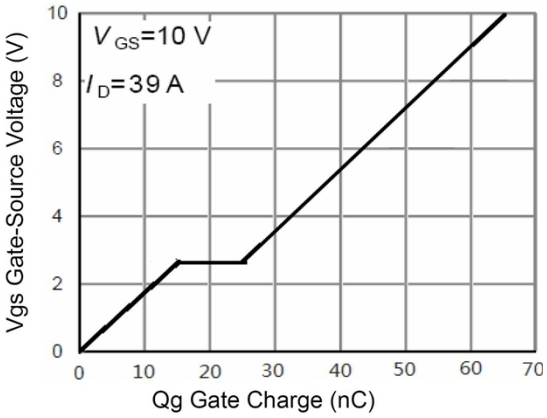
Output Characteristics



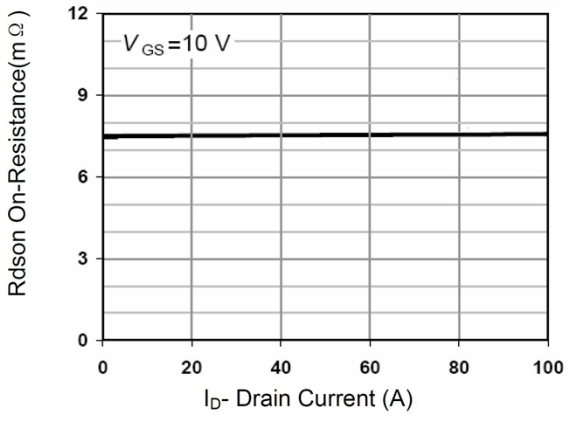
Rdson-JunctionTemperature



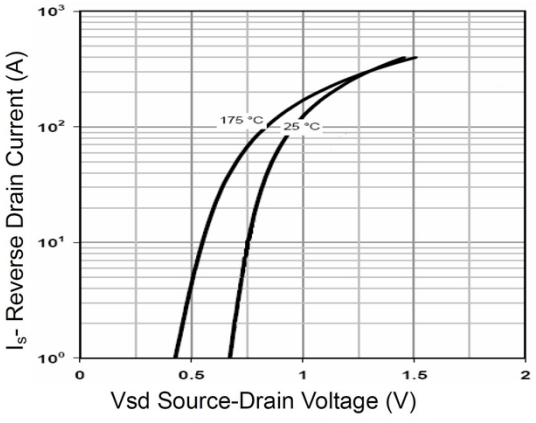
Transfer Characteristics



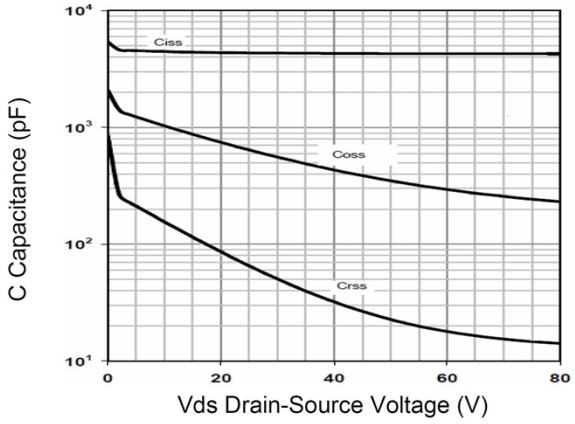
Gate Charge



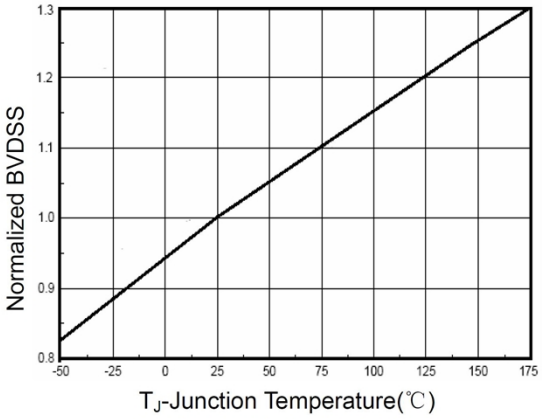
Rdson- Drain Current



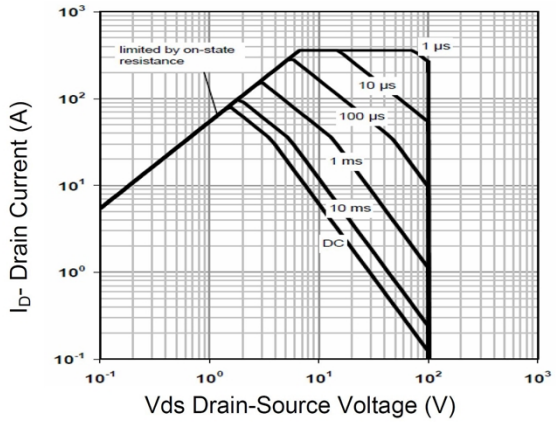
Source- Drain Diode Forward



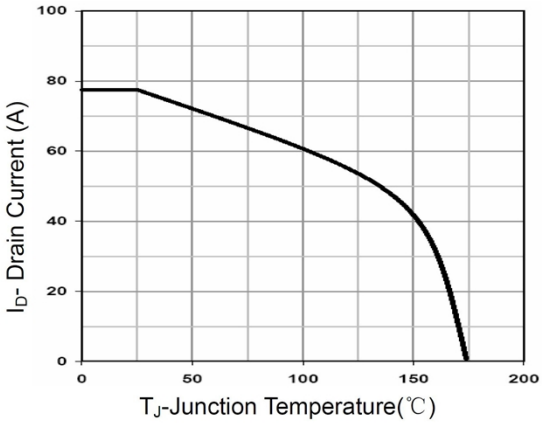
Capacitance vs Vds



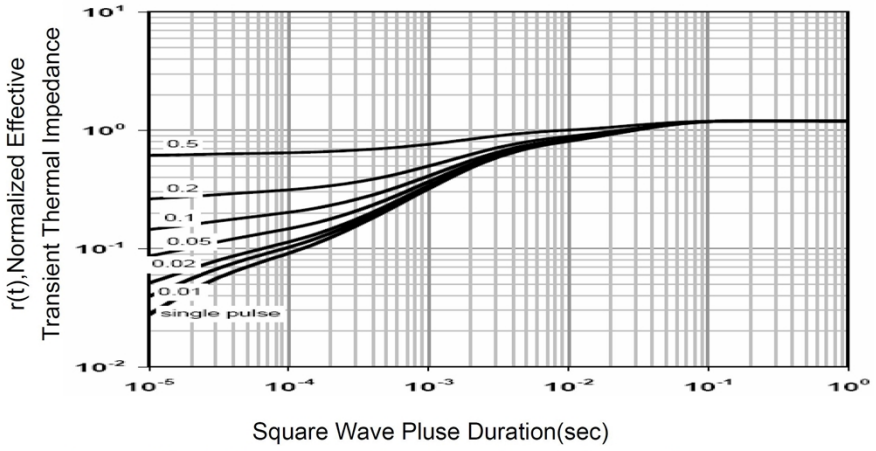
BV_{DSS} vs Junction Temperature



Safe Operation Area

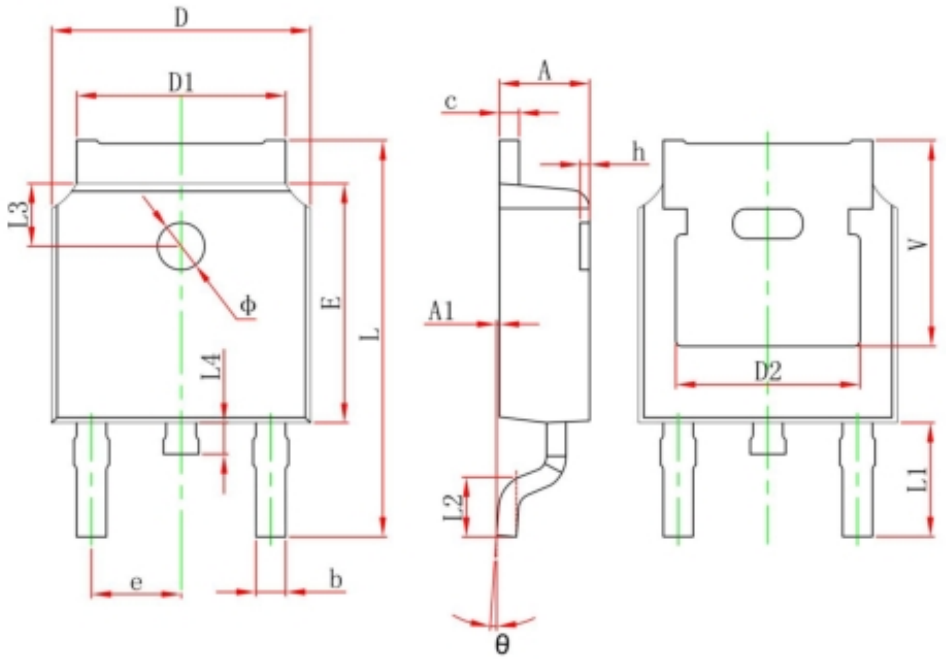


Current De-rating



Normalized Maximum Transient Thermal Impedance

TO-252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	