

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-100V	70mΩ@-10V	-20A
	85mΩ@-4.5V	

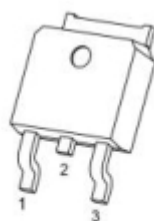
Feature

- Advanced trench process technology
- Super high dense cell design

Application

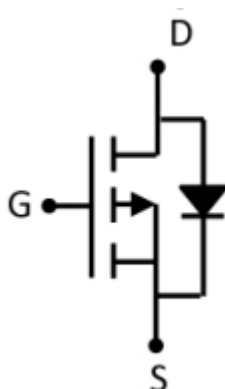
- Motor control
- Power management
- DC/DC convertor

Package

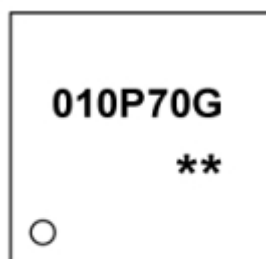


TO-252(1:G 2:D 3:S)

Circuit diagram



Marking



010P70G =Device Code

****** =Week Code

Absolute maximum ratings

($T_a=25^{\circ}\text{C}$ unless otherwise noted)

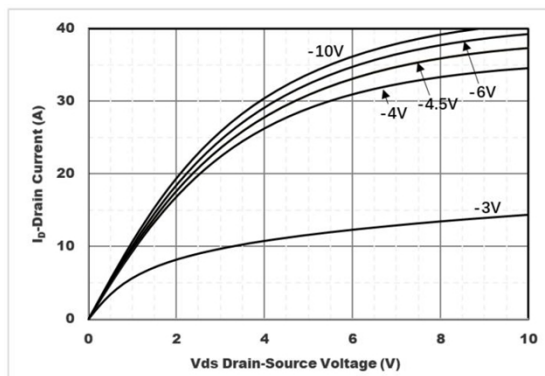
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous ($T_C=25^{\circ}\text{C}$)	I_D	-20	W
Drain Current – Pulsed	I_{DM}	-80	A
Power Dissipation ($T_C=25^{\circ}\text{C}$)	P_D	70	W
Thermal Resistance Junction to Case	$R_{\theta JC}$	1.78	$^{\circ}\text{C}/\text{W}$
Storage Temperature Range	T_{STG}	-55~ +150	$^{\circ}\text{C}$
Operating Junction Temperature Range	T_J	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics

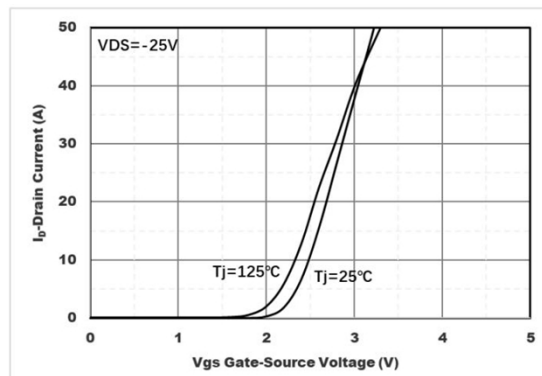
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS} = 0V, I_D = -250\mu A$	-100			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = -100V, V_{GS} = 0V$			-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-1.7	-2.5	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -10A$		70	88	m Ω
		$V_{GS} = -4.5V, I_D = -5A$		85	115	
Dynamic characteristics ⁴						
Input Capacitance	C_{iss}	$V_{DS} = -50V, V_{GS} = 0V, f = 1MHz$		1050		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			23		
Total Gate Charge	Q_g	$V_{GS} = -10V, V_{DS} = -50V, I_D = -10A$		20		nC
Gate-Source Charge	Q_{gS}			4		
Gate-Drain Charge	Q_{gd}			4.4		
Turn-On Delay Time	$T_{d(on)}$	$V_{GS} = -10V, V_{DD} = -50V, I_D = -10A, R_{GEN} = 9.1\Omega$		15		nS
Rise Time	T_r			30		
Turn-Off Delay Time	$T_{d(off)}$			73		
Fall Time	T_f			76		
Drain-Source Diode Characteristics						
Diode forward voltage	V_{SD}	$V_{GS} = 0V, I_S = -1A$			-1.2	V

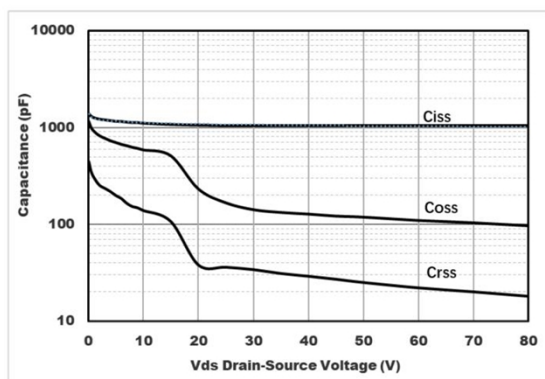
Typical Characteristics



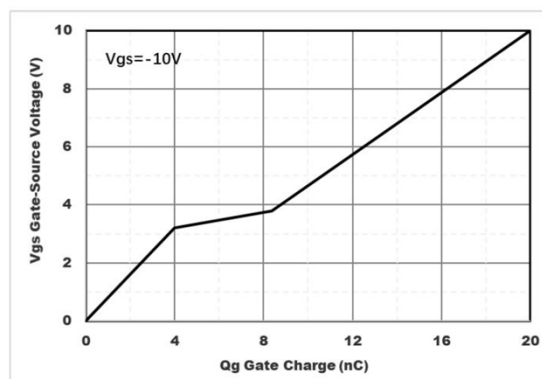
Output Characteristics



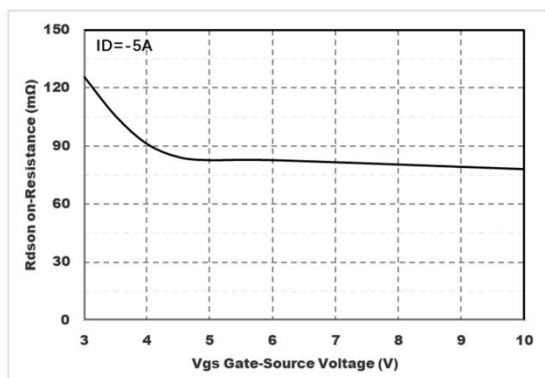
Transfer Characteristics



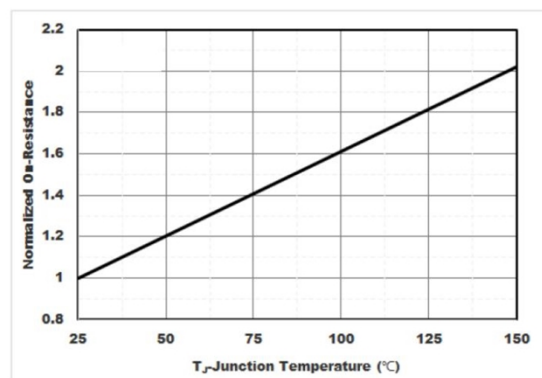
Capacitance Characteristics



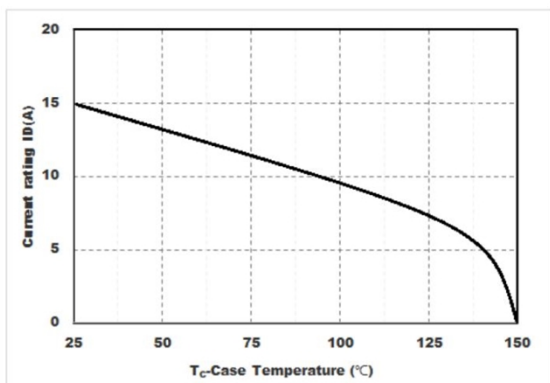
Gate Charge



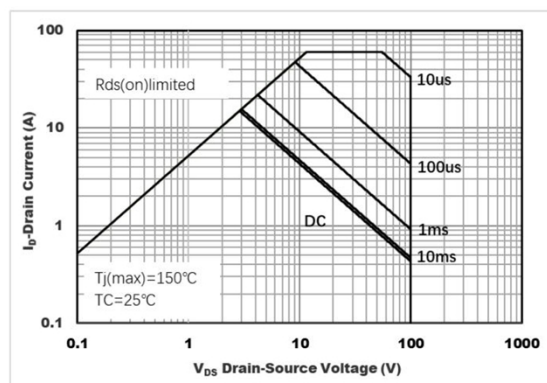
On-Resistance vs. Gate to Source Voltage



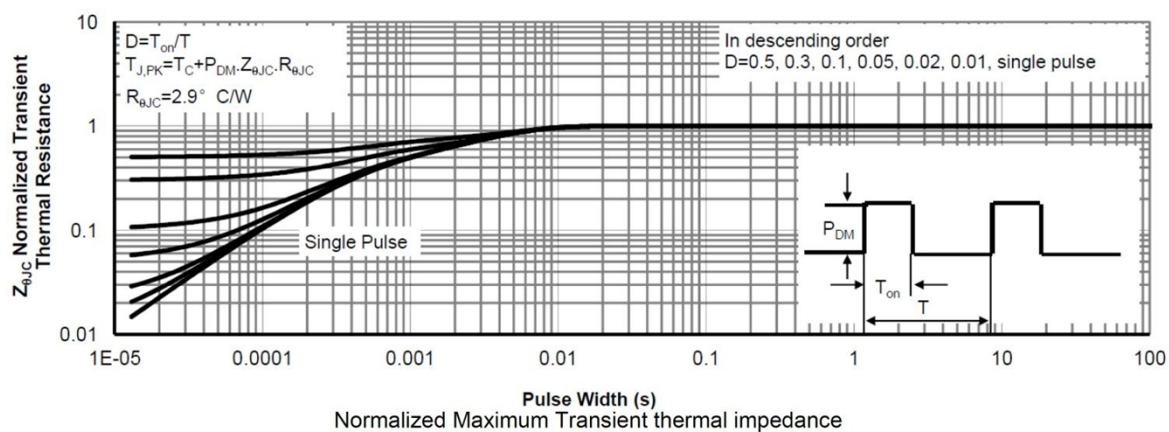
Normalized On-Resistance



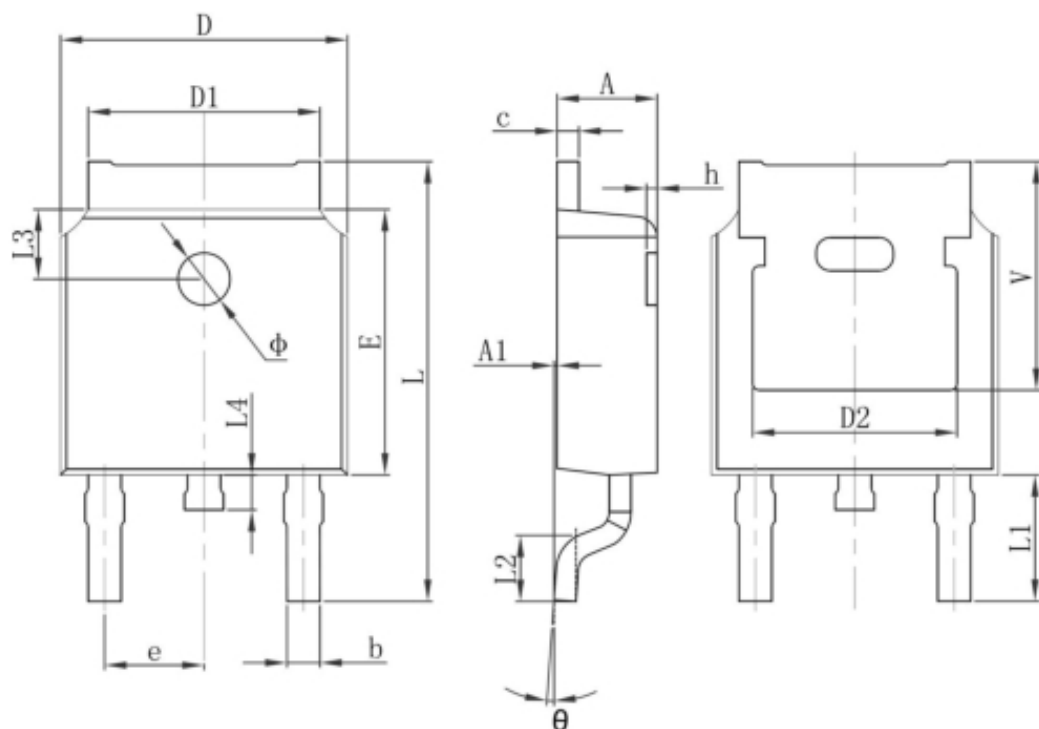
Drain current



Safe Operation Area



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.	