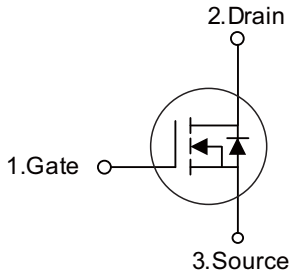
■ PRODUCT CHARACTERISTICS

VDSS	75V
R_{DS}(on)typ(@V_{GS} =10 V)	7.5mΩ
Qg@type	41nC
ID	75A

Symbol



■ APPLICATIONS

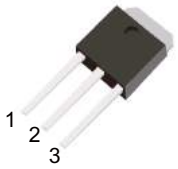
- High frequency switching mode power supply
- Electronic ballast
- LED power supply

■ FEATURES

* Fast Switching Capability
* Avalanche Energy Specified
* Improved dv/dt Capability, High Ruggedness



TO-252



TO-251

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT75N75D	TO-252	2500pieces/Reel
N/A	MOT75N75C	TO-251	70pieces/Tube

■ ABSOLUTE MAXIMUM RATINGS (T_C=25°C, unless otherwise noted)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	75	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	Continuous	I_D	75	A
	Pulsed	I_{DM}	150	A
Avalanche Energy	Single Pulsed	E_{AS}	163	mJ
Peak Diode Recovery dv/dt		dv/dt	10.5	V/ns
Power Dissipation		P_D	64	W
Junction to Case		θ_{JC}	1.95	°C/W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55 ~ +150	°C

■ ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250μA	75	-	-	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=75V, V_{GS}=0V	-	-	1	μA
Gate-Source Leakage Curre	I_{GSS}	V_{GS}=±30V, V_{DS}=0V	-	-	±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=250μA	1	-	3	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=2.0A	-	7.5	9.5	mΩ
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	V_{DS}=25V, V_{GS}=0V f=1MHz	-	1340	-	pF
Output Capacitance	C_{OSS}		-	105	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	18	-	pF
SWITCHING CHARACTERISTICS						
Total Gate Charge	Q_G	V_{DS}=100V, V_{GS}=10V I_D=4A,I_G=1mA	-	41	-	nC
Gate-Source Charge	Q_{GS}		-	11	-	nC
Gate-Drain Charge	Q_{GD}		-	18	-	nC
Turn-On Delay Time (Note	$t_{D(ON)}$	V_{DD}=100V, V_{GS}=10V I_D=4A,R_G =25Ω	-	40	-	ns
Turn-On Rise Time	t_R		-	48	-	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	120	-	ns
Turn-Off Fall Time	t_F		-	44	-	ns
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Continuous Forward Current	I_S		-	-	4	A
Maximum Pulsed Forward Current	I_{SM}		-	-	8	A
Drain-Source Diode Forward Voltage	V_{SD}	I_S=4.0A, V_{GS}=0V	-	-	1.4	V
Body Diode Reverse Recovery Time	t_{rr}	I_S=4.0A, V_{GS}=0V, dI_F/dt=100A/μs	-	840	-	nS
Body Diode Reverse Recovery Charge	Q_{rr}		-	11.5	-	μC

Notes: 1. Pulse Test: Pulse width ≤ 300μs, Duty cycle≤2%.
2. Essentially independent of operating temperature.

■ TYPICAL CHARACTERISTICS

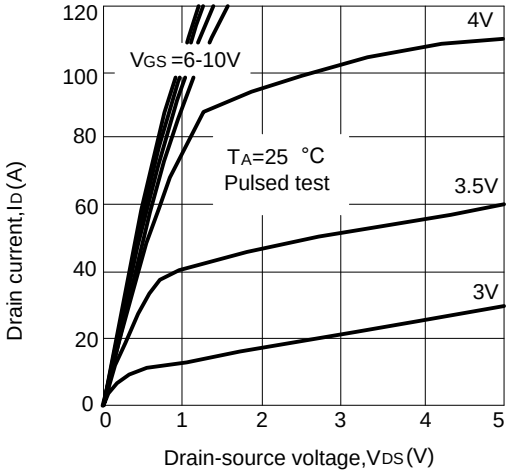


Figure1:Drain current vs.darin-source voltage

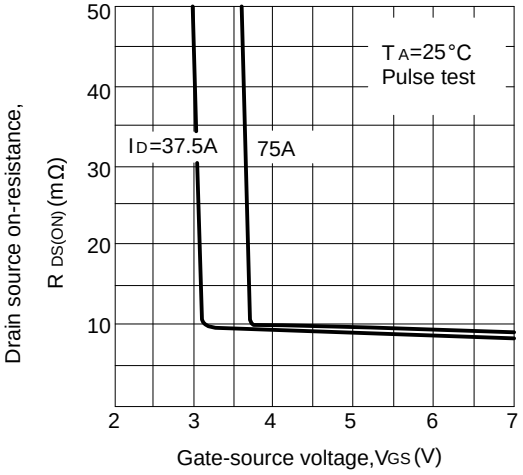


Figure2:Drain source on resistance vs. Gate-source voltage

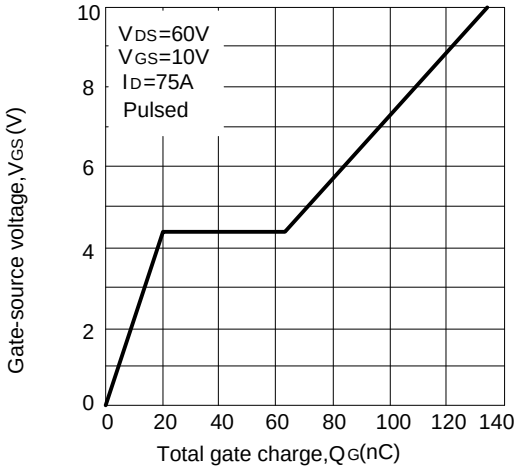


Figure3:Gate charge characteristics

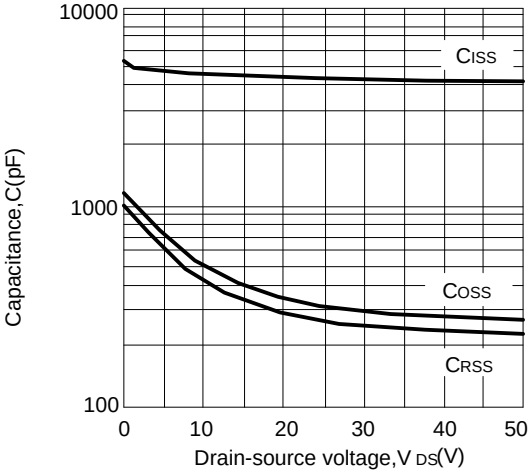


Figure4:Capacitance characteristics

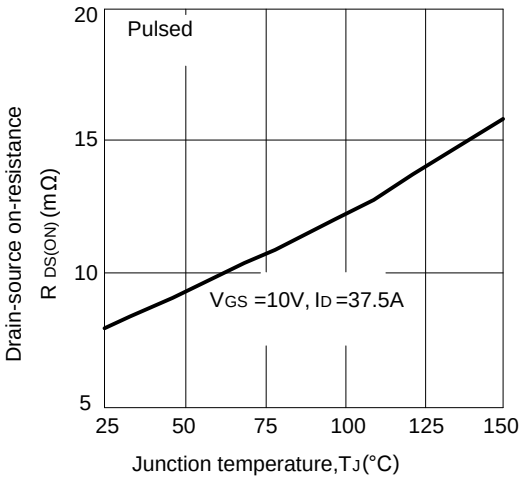


Figure5:Drain-source on resistance vs junction temperature

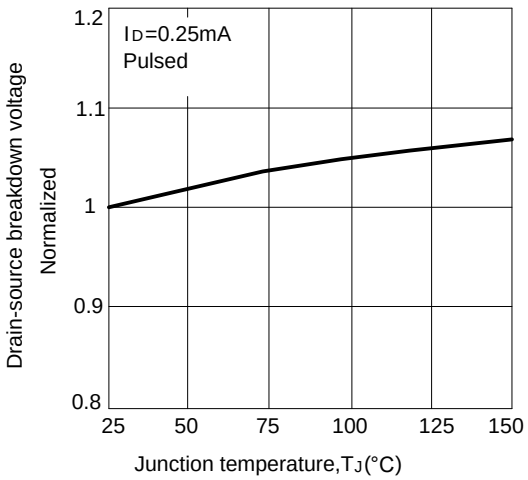


Figure6:Breakdown voltage vs junction temperature

■ TYPICAL CHARACTERISTICS(Cont.)

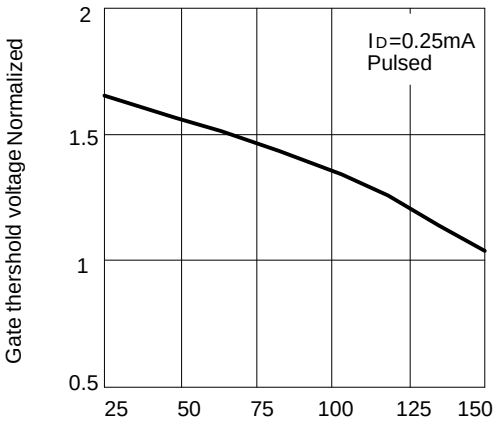


Figure7:Gate thershold voltage vs junction temperature

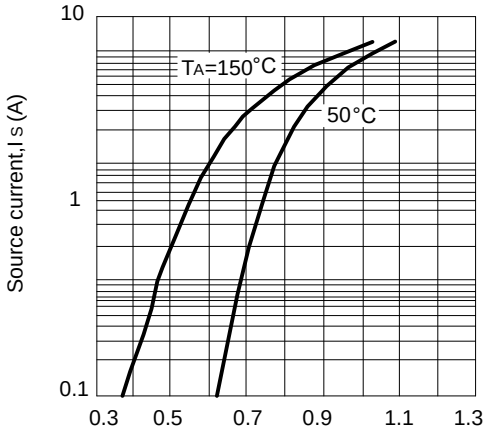


Figure8:Source current vs source drain voltage

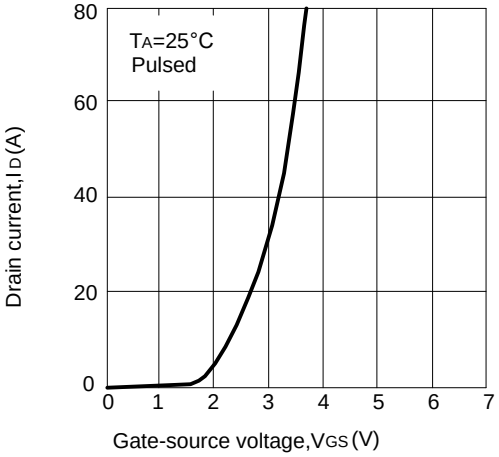


Figure9:Drain current vs. gate-source voltage

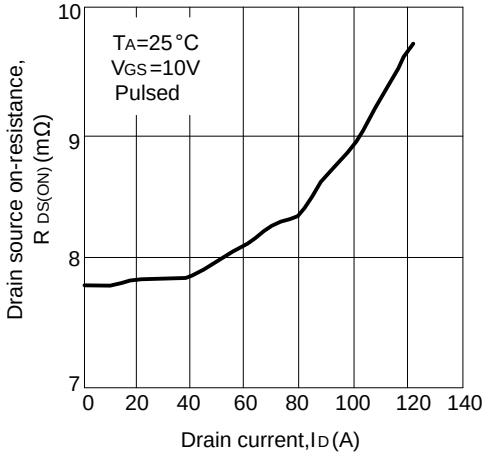


Figure10:Drain source on resistance vs.drain current

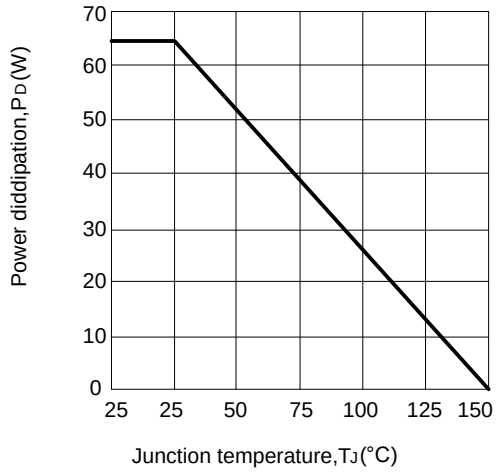


Figure11:Power diddipationvs. junction temperature

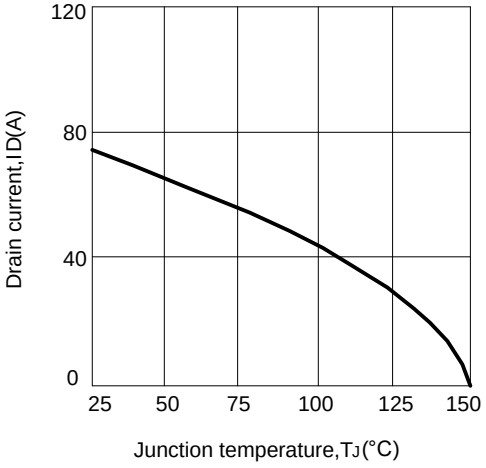


Figure12:Drain current vs. junction temperature

■ TYPICAL CHARACTERISTICS(Cont.)

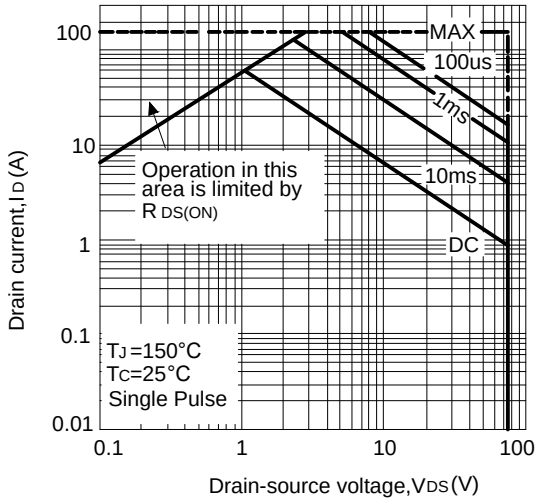
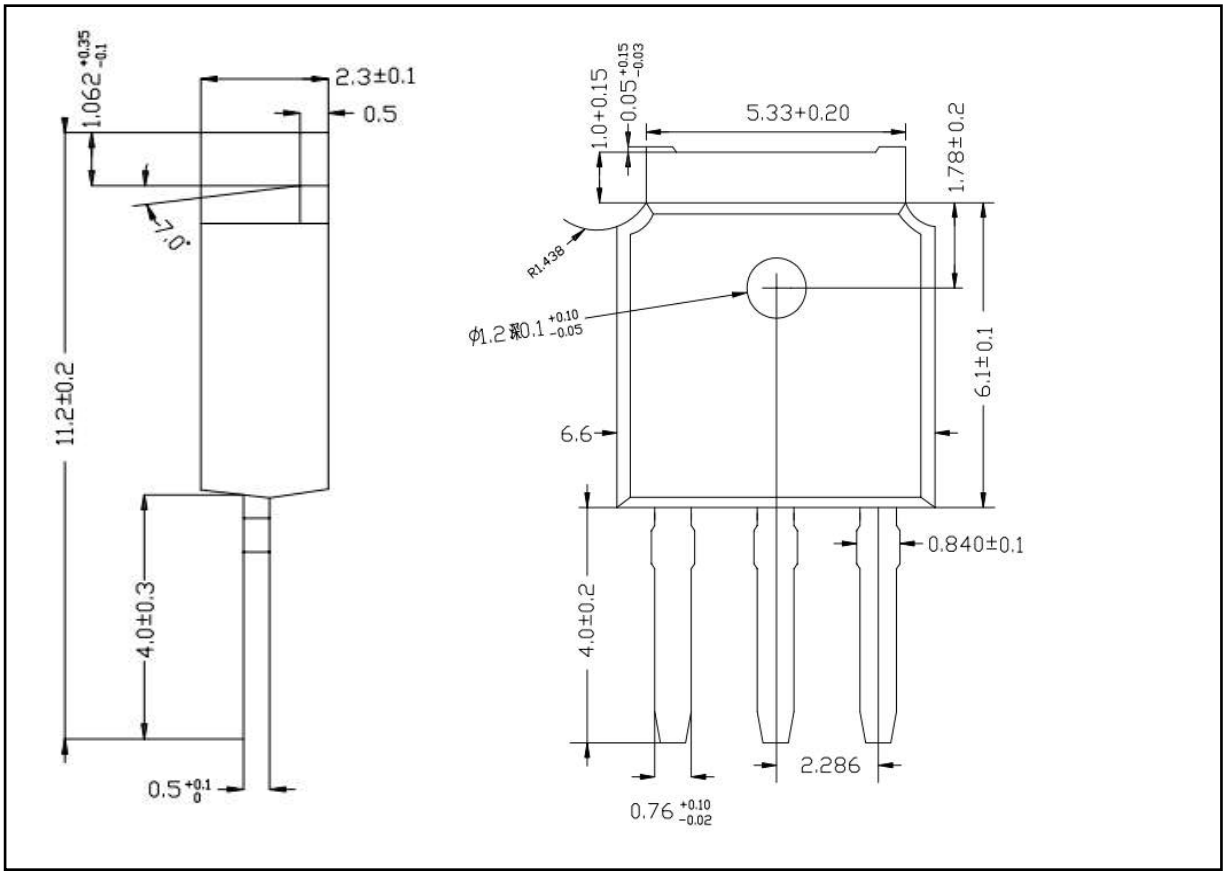


Figure13:Safe operating area

■ TO-251 PACKAGE OUTLINE DIMENSIONS



■ TO-251 PACKAGE OUTLINE DIMENSIONS

