

Description

This 60V dual N-Channel MOSFET in a SOT-363 Plastic Package.

Applications

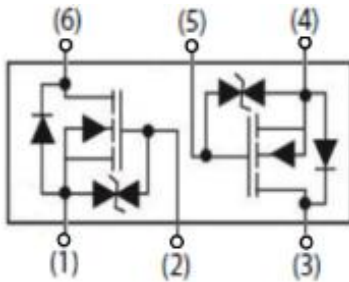
Intended for use in general purpose switching and phase control applications.

Features

- Sensitive gate trigger current and Low Holding current.ESD protected diode
- Halogen-free Product.

V_{DSS}	$R_{DS(on)}$ (Typ)	I_D
60V	1.7Ω	320mA

Equivalent Circuit & Pinning



PIN1、PIN4 : Source

PIN 2、PIN5 : Gate

PIN 3、PIN6 : Drain

Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain-Gate Voltage	V_{DGR}	60	V
Maximum Drain Current - Continuous	I_D	320	mA
Maximum Drain Current - Pulsed	I_{DM}	1.5	A
Gate-Source Voltage - Continuous	V_{GSS}	± 20	V
Maximum Power Dissipation	P_D	350	mW
Storage Temperature Range	T_{stg}	-55~150	°C
Maximum Junction-to-Ambient(Note 1)	$R_{\theta JA}(\text{Steady State})$	417	°C/W
	$R_{\theta JA}(t \leq 5s)$	300	

Note 1) Surface-mounted on FR4 board using 1 sq in pad size with 1 oz Cu

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$V_{GS}=0$ $I_D=250\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$ $V_{DS}=60V$			1.0	μA
Gate-Source Leakage	I_{GSS}	$V_{DS}=0V$ $V_{GS}=\pm 20V$			± 10	μA
Static Drain-Source On-Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=0.5A$			2.3	Ω
	$R_{DS(on)(2)}$	$V_{GS}=5V$ $I_D=0.05A$		1.7	2.7	Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=250mA$			1.5	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.6	2.5	V
Forward Transconductance	Y_{fs}	$V_{DS}=10V$ $I_D=0.2A$	80			mS
Input Capacitance	C_{iss}	$V_{GS}=0V$ $f=1MHz$, $V_{DS}=20V$		25	50	pF
Output Capacitance	C_{oss}			11	25	
Reverse Transfer Capacitance	C_{rss}			2.5	5	
Total Gate Charge	$Q_{G(TOT)}$	$V_{GS}=4.5V$ $V_{DS}=10V$; $I_D=200mA$		0.7		nC
Threshold Gate Charge	$Q_{G(TH)}$			0.1		
Gate-to-Source Charge	Q_{GS}			0.3		
Gate-to-Drain Charge	Q_{GD}			0.1		

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(ON)}$	VGS =10V, VDD=25V, ID=500mA, RG=25Ω		12.2		ns
Rise Time	t_r			9.0		
Turn-Off Delay Time	$t_{d(OFF)}$			55.8		
Fall Time	t_f			29		

Electrical Characteristic Curve

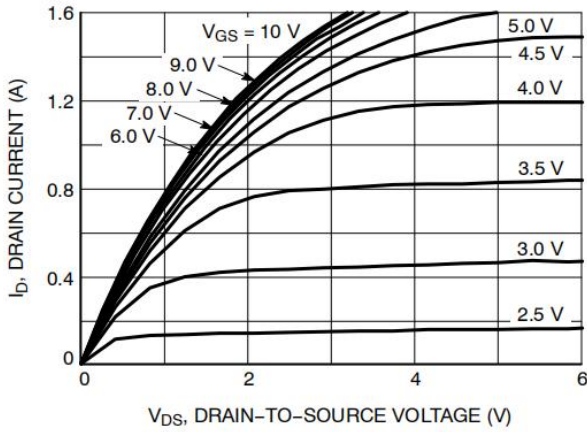


Figure 1. On-Region Characteristics

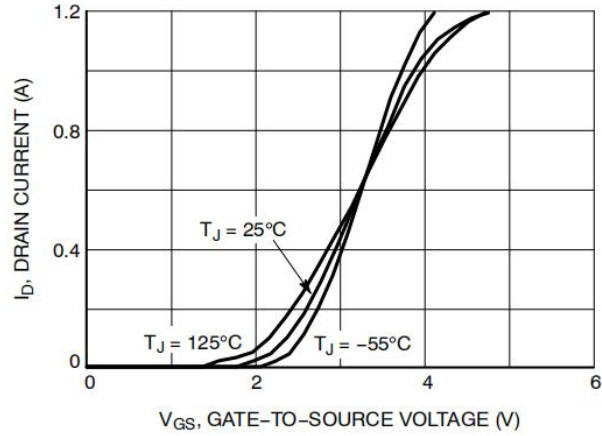


Figure 2. Transfer Characteristics

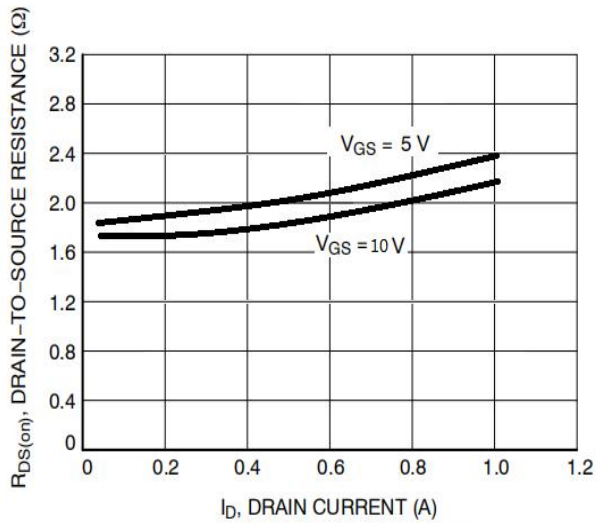


Figure 3. On-Resistance vs. Drain Current and Temperature

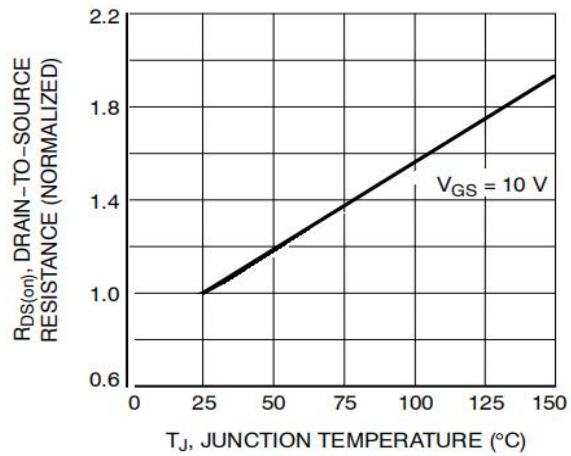


Figure 4 On-Resistance Variation with Temperature

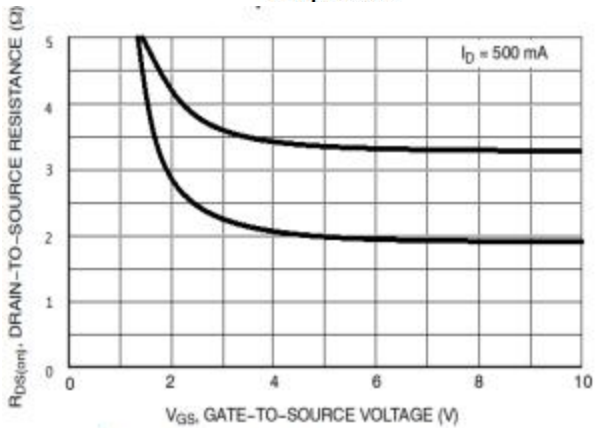


Figure 5. On-Resistance vs. Gate-to-Source Voltage

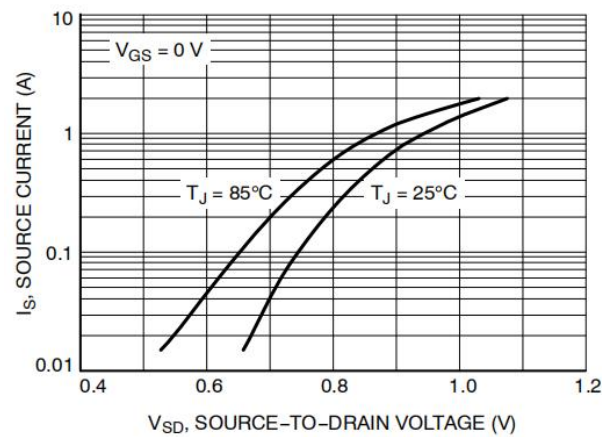


Figure 6 Diode Forward Voltage vs. Current

Electrical Characteristic Curve

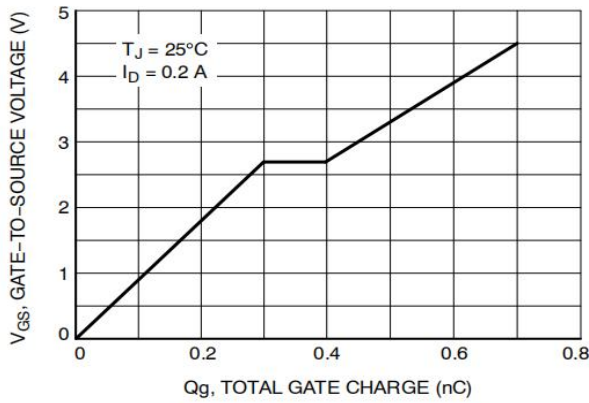


Figure 7 . Gate-to-Source and Drain-to-Source Voltage vs. Total Charge

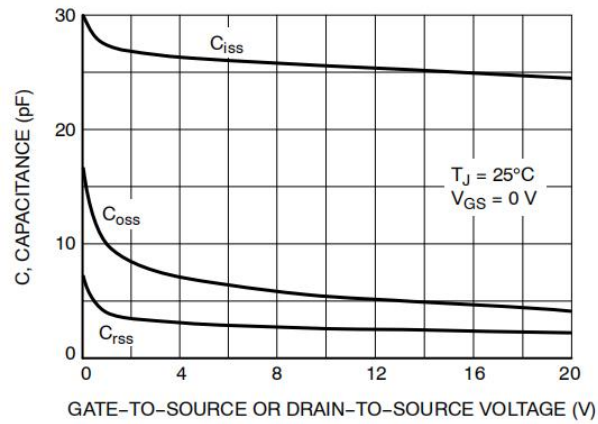


Figure 8 . Capacitance Variation

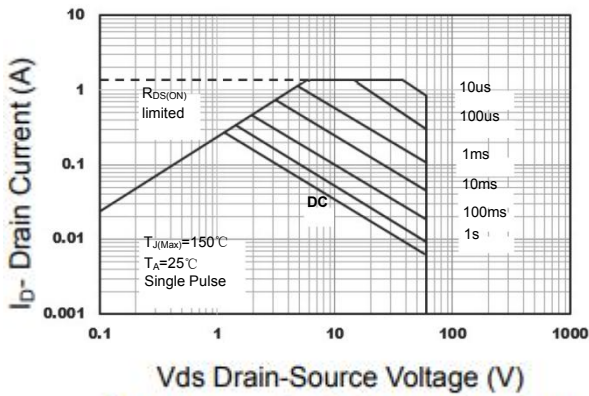


Figure 9 : Safe Operation Area

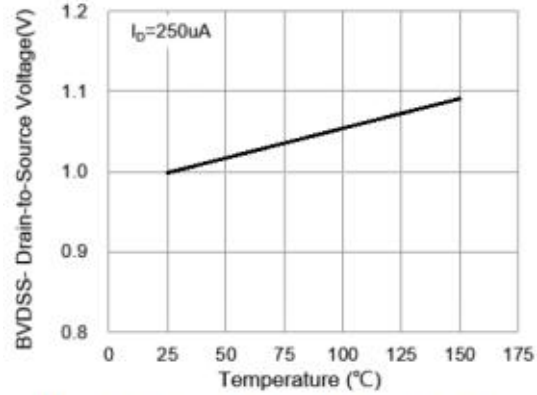


Figure 10 : Breakdown Voltage vs. Temperature

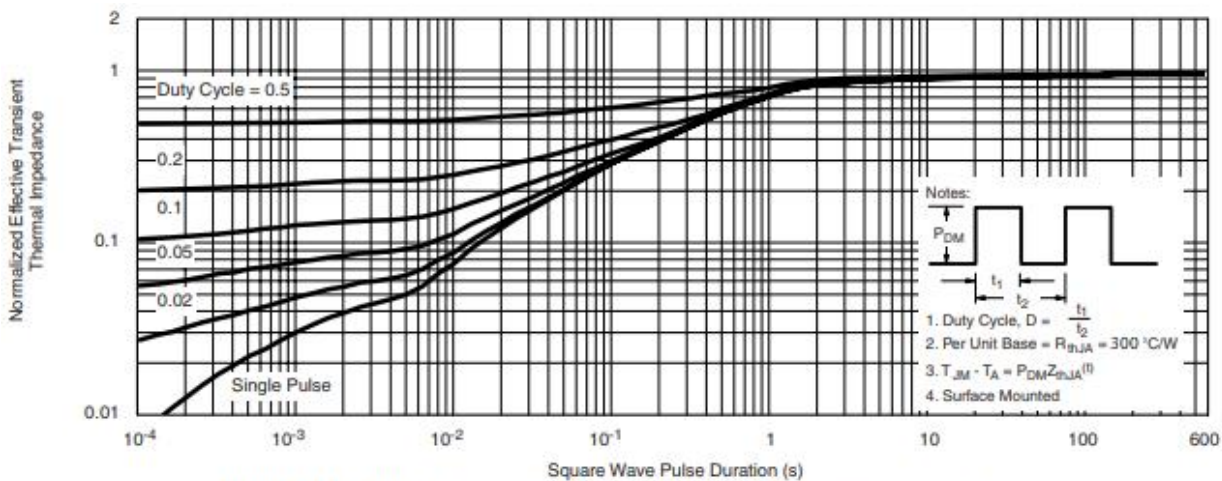
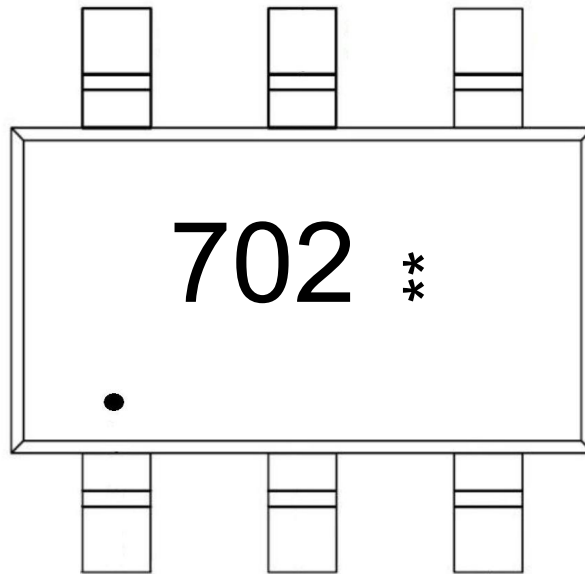


Figure 11 : Normalized Thermal Transient Impedance, Junction-to-Ambient

Marking Instructions



Note:

● : "1" Pin

702 : Product Type Code

***: Lot No. Code, code change with Lot No

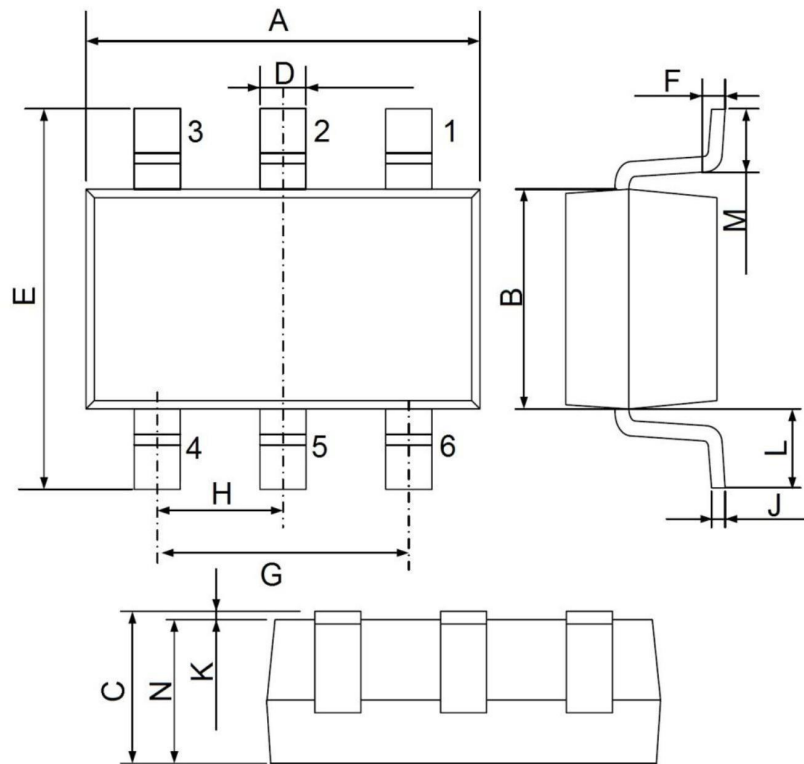
Packaging SPEC.

REEL INFORMATION

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-363	3,000	10	30,000	6	180,000	7" x8	180×120×180	390×385×205

Package Outline Dimensions

SOT-363-6L



UNIT: mm

DIM	MIN	MAX
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
E	1.95	2.25
F	0.20 Typ.	
G	1.20	1.40
H	0.65 Typ.	
J	0.08	0.15
K	0.00	0.10
L	0.525 Ref.	
M	0.26	0.46
N	0.90	1.10