

Features

- $R_{DS(ON)} < 3.0 \Omega$ @ $V_{GS}=4.5V$
- $R_{DS(ON)} < 2.5 \Omega$ @ $V_{GS}=10V$
- Trench Power MV MOSFET technology
- Voltage controlled small signal switch
- Low input Capacitance
- Fast Switching Speed

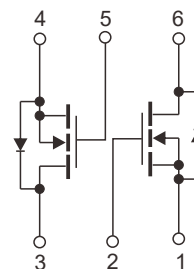
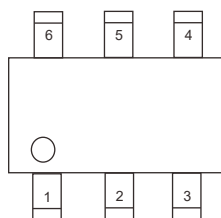


Product Summary		
V_{DS}	$R_{DS(on)}$ (Ω) Typ	I_D (mA)
50V	1.2@ 4.5V	340
	1.1@ 10V	

Mechanical Data

- Case: SOT-363
- Terminals: Plated solderable per MIL-STD-750, method 2026
- Mounting Position: Any

SOT-363



N-channel MOSFET

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

Parameters		Symbol	Value	Unit
Drain-Source voltage		V_{DS}	50	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A=25^\circ\text{C}$	I_D	340	mA
	$T_A=70^\circ\text{C}$		272	
Pulsed Drain Current ¹⁾		I_{DM}	1.5	A
Maximum Power Dissipation @ $T_A=25^\circ\text{C}$		P_D	350	mW
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Thermal Resistance Ratings

Parameters	Symbol	Typ	Max	Unit
Junction to Ambient, Steady State ²⁾	$R_{\theta JA}$	-	357	$^\circ\text{C}/\text{W}$

Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameters	Symbol	Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	50	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =50V, V _{GS} =0V, T _C =25°C	-	-	1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V	-	-	±100	nA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	0.8	1.2	1.6	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D =300mA	-	1.1	2.5	Ω
		V _{GS} = 4.5V, I _D =200mA	-	1.2	3.0	
Dynamic						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz	-	28.5	-	pF
Output Capacitance	C _{oss}		-	2.7	-	
Reverse Transfer Capacitance	C _{rss}		-	1.78	-	
Total Gate Charge	Q _g	V _{DS} =25V, V _{GS} =10V, I _D =0.3A	-	1.7	-	nC
Gate-Source Charge	Q _{GS}		-	0.4	-	
Gate-Drain Charge	Q _{GD}		-	0.24	-	
Reverse Recovery Charge	Q _{rr}	I _F =0.3A, di/dt=100A/us	-	2.65	-	nC
Reverse Recovery Time	t _{rr}		-	12.2	-	
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =25V, R _{GEN} =6Ω, I _D =0.3A	-	2.6	-	ns
Turn-on Rise Time	t _r		-	18.8	-	
Turn-off Delay Time	t _{D(off)}		-	9.7	-	
Turn-off Fall Time	t _f		-	47	-	
Drain-Source Body Diode Characteristics						
Maximum Body-Diode Continuous Current	I _S		-	-	340	mA
Diode Forward Voltage	V _{SD}	I _S =0.3mA, V _{GS} =0V	-	-	1.2	V

Notes: 1. Pulse Test: Pulse Width≤300us, Duty cycle ≤2%.
2. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Typical Characteristics Diagrams

Figure 1. Output Characteristics

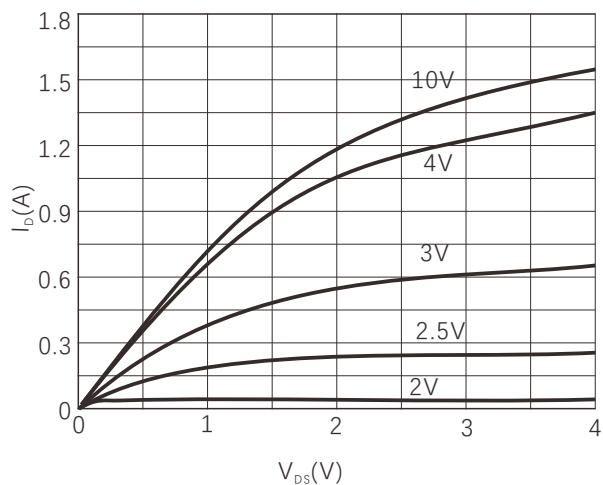


Figure 2. Transfer Characteristics

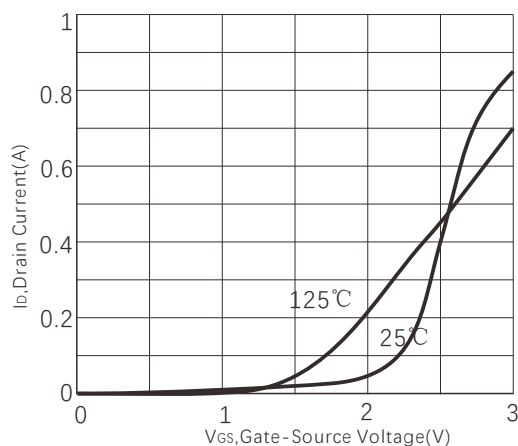


Figure 3. On-Resistance vs. Drain Current

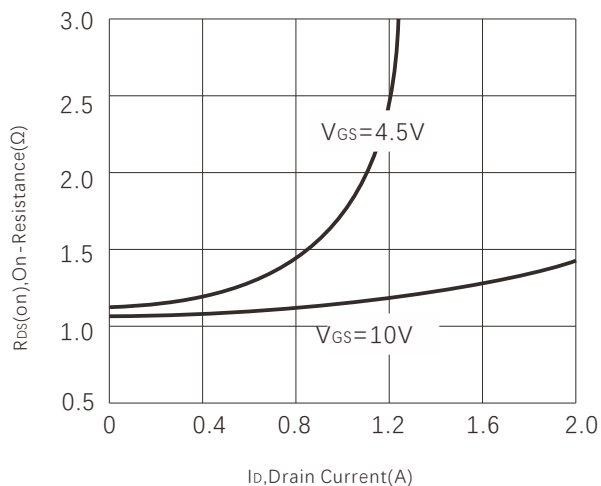
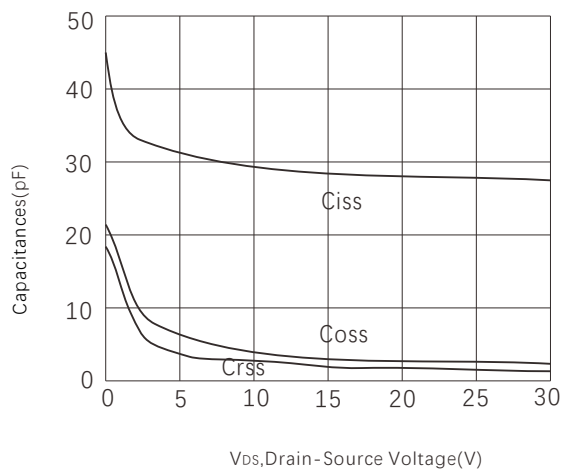


Figure 4. Capacitance



Typical Characteristics Diagrams

Figure 5. Gate charge

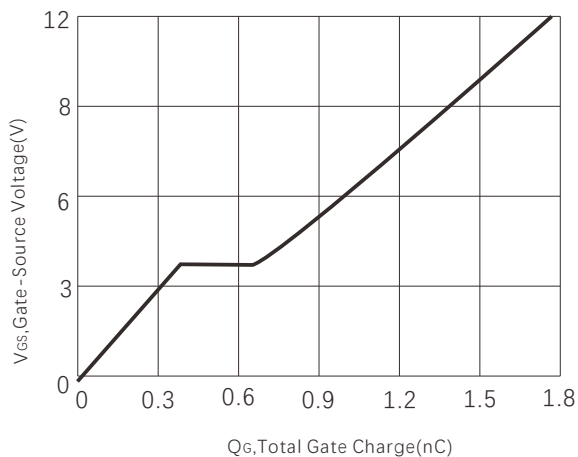


Figure 6. Normalized $R_{DS(ON)}$ vs Junction Temperature

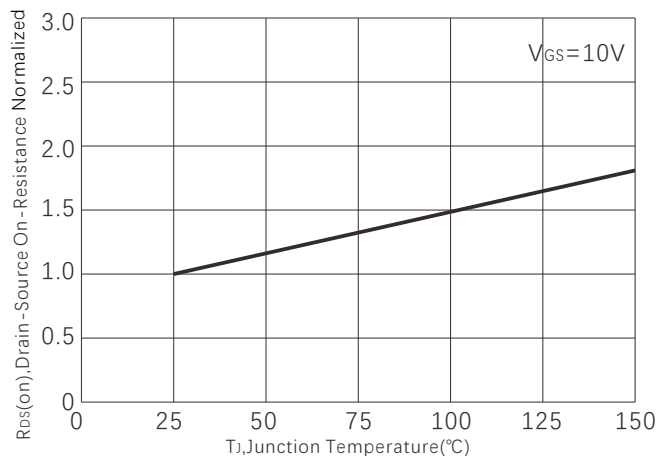


Figure 7. Safe operating area

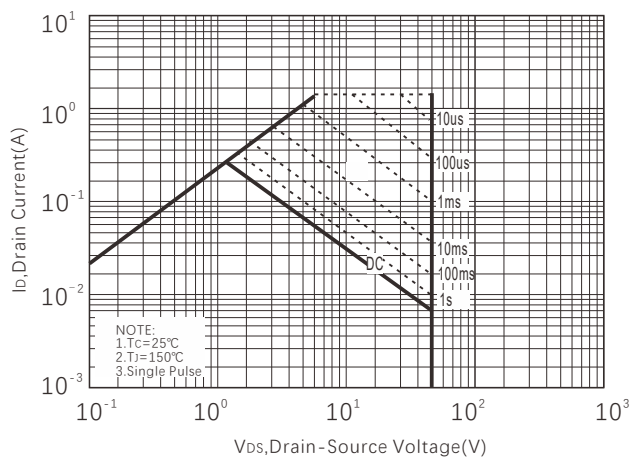
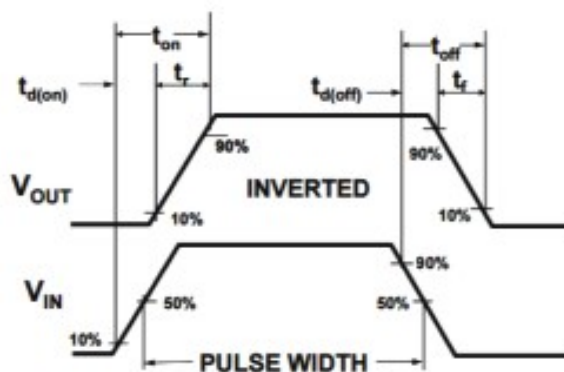
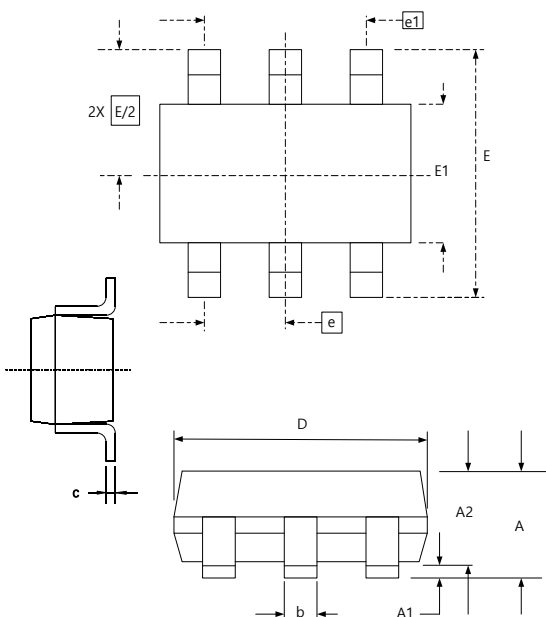


Figure 8. Switching wave



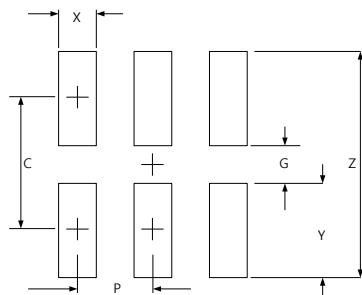
PACKAGE OUTLINE DIMENSIONS

SOT-363



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90		1.10	0.035		0.043
A1	0.00		0.10	0.000		0.004
A2	0.70	0.90	1.00	0.028	0.035	0.039
b	0.15		0.35	0.006		0.014
c	0.08		0.25	0.003		0.010
D	1.80	2.00	2.20	0.071	0.079	0.087
E1	1.15	1.25	1.35	0.045	0.049	0.053
E	2.15	2.30	2.45	0.085	0.091	0.096
e	0.65 BSC			0.026 BSC		
e1	1.30 BSC			0.051 BSC		

Suggested pad layout



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	1.85	0.073
G	1.00	0.039
P	0.65	0.026
X	0.40	0.016
Y	0.85	0.033
Z	2.70	0.106

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