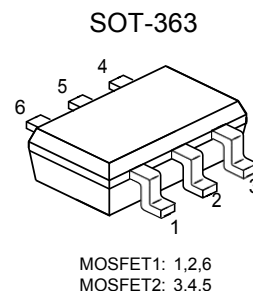


Dual N-Channel Enhancement Mode Field Effect Transistor

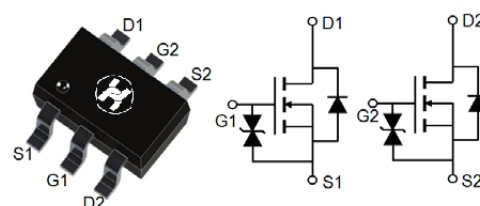
FEATURES

- Low on-resistance: $V_{DS}=60V, I_D=300mA, R_{DS(ON)} \leq 1.9\Omega @ V_{GS}=10V$
- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- High saturation current capability
- Rugged and reliable
- ESD Protection



MECHANICAL DATA

- Case: SOT-363
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.3 grams (approximate)
- Marking: K72



MAXIMUM RATINGS $T_A = 25^\circ\text{C}$ unless otherwise noted

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Symbol	Parameter	Rating	Unit	
Common Ratings (T _A =25°C Unless Otherwise Noted)				
V _{GS}	Gate-Source Voltage	±12	V	
V _{(BR)DSS}	Drain-Source Breakdown Voltage	60	V	
T _J	Maximum Junction Temperature	150	°C	
T _{STG}	Storage Temperature Range	-50 to 150	°C	
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested①	T _A =25°C	0.8	A
I _D	Continuous Drain Current	T _A =25°C	0.3	A
		T _A =70°C	0.24	
P _D	Maximum Power Dissipation	T _A =25°C	0.3	W
		T _A =70°C	0.2	
R _{θJA}	Thermal Resistance Junction-Ambient	400	°C/W	

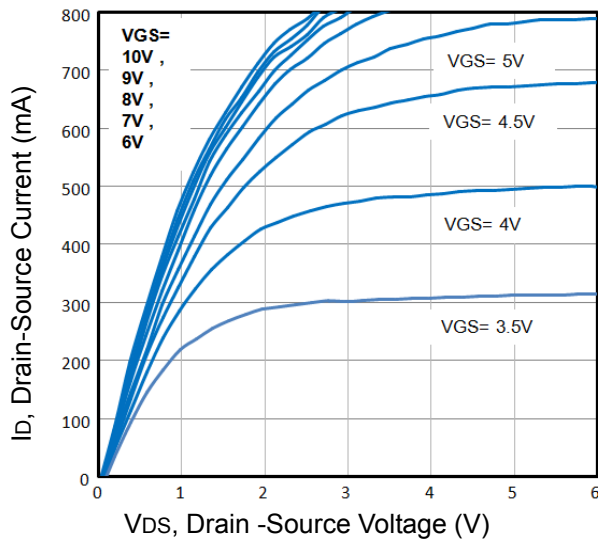
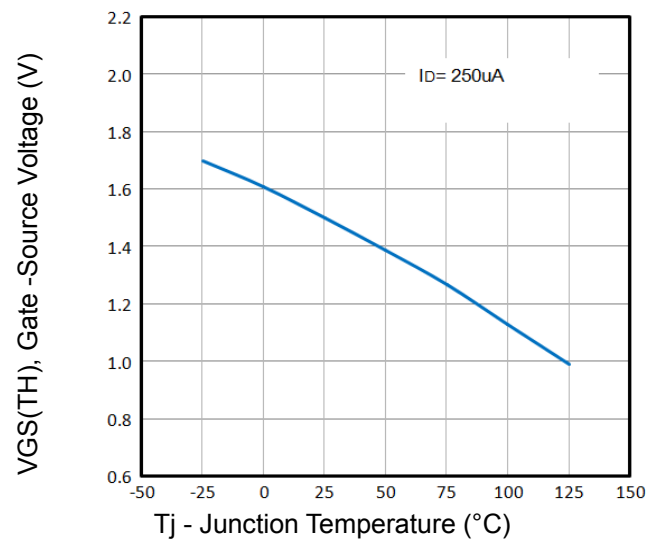
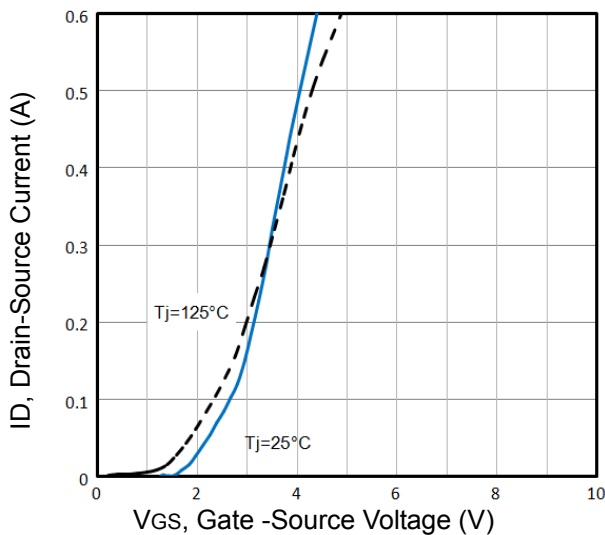
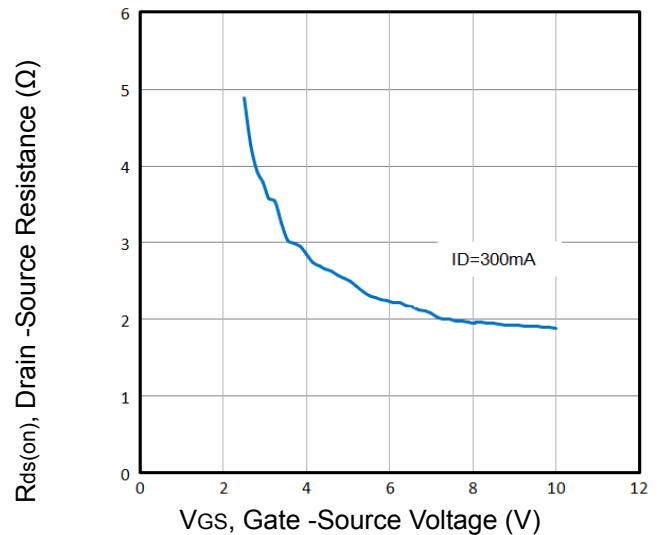
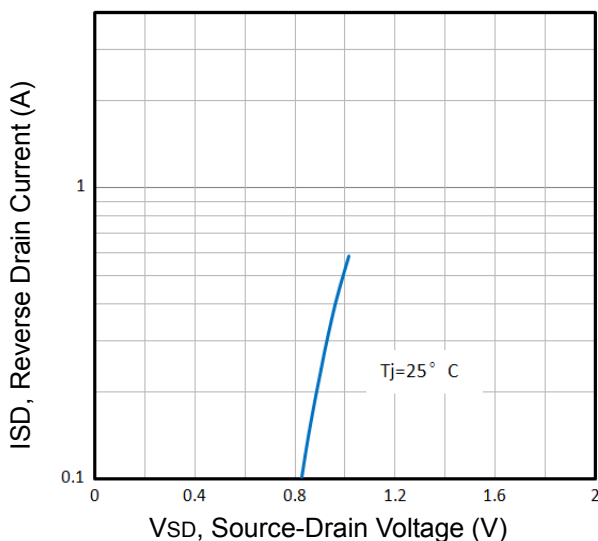
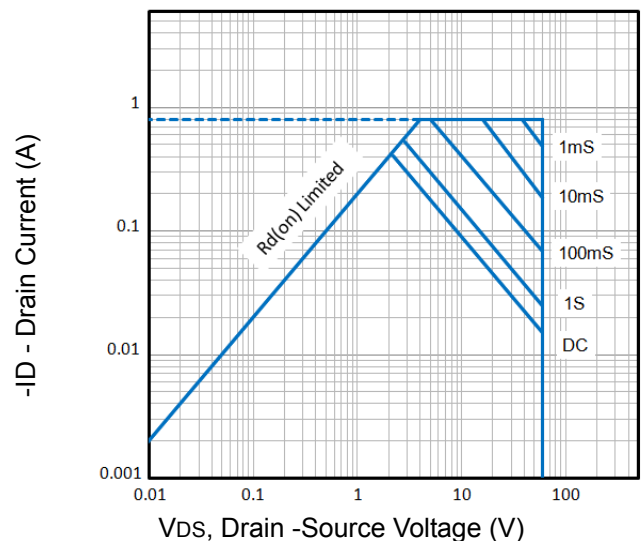
Dual N-Channel Enhancement Mode Field Effect Transistor
MOSFET ELECTRICAL CHARACTERISTICS $T_A=25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V I _D =250μA	60	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current(T _A =25°C)	V _{DS} =60V, V _{GS} =0V	--	--	1	μA
	Zero Gate Voltage Drain Current(T _A =125°C)	V _{DS} =48V, V _{GS} =0V	--	--	100	uA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±12V, V _{DS} =0V	--	--	±100	nA
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	1.0	1.5	2.5	V
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =10V, I _D =0.3A	--	1.9	3	Ω
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =4.5V, I _D =0.2A	--	2.5	4	Ω
Dynamic Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
C _{iss}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz	--	12	--	pF
C _{oss}	Output Capacitance		--	3.2	--	pF
C _{rss}	Reverse Transfer Capacitance		--	0.8	--	pF
Q _g	Total Gate Charge	V _{DS} =30V I _D =0.3A, V _{GS} =10V	--	0.65	--	nC
Q _{gs}	Gate Source Charge		--	0.12	--	nC
Q _{gd}	Gate Drain Charge		--	0.21	--	nC
Switching Characteristics						
t _{d(on)}	Turn on Delay Time	V _{DD} =30V, I _D =0.3A, R _G =3.3Ω, V _{GS} =10V	--	4.5	--	ns
t _r	Turn on Rise Time		--	3.1	--	ns
t _{d(off)}	Turn Off Delay Time		-	15	--	ns
t _f	Turn Off Fall Time		--	3.3	--	ns
Source Drain Diode Characteristics						
I _{SD}	Source drain current(Body Diode)	T _A =25°C	--	--	0.2	A
V _{SD}	Forward on voltage②	T _J =25°C, I _{SD} =0.2A, V _{GS} =0V	--	0.8	1.2	V

Notes:

① Pulse width limited by maximum allowable junction temperature

② Pulse test ; Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Dual N-Channel Enhancement Mode Field Effect Transistor
Typical Characteristics

Fig1. Typical Output Characteristics

Fig2. Normalized Threshold Voltage Vs. Temperature

Fig3. Typical Transfer Characteristics

Fig4. $R_{ds(on)}$ vs Gate-Source Voltage

Fig5. Typical Source-Drain Diode Forward Voltage

Fig6. Maximum Safe Operating Area

Dual N-Channel Enhancement Mode Field Effect Transistor

Typical Characteristics

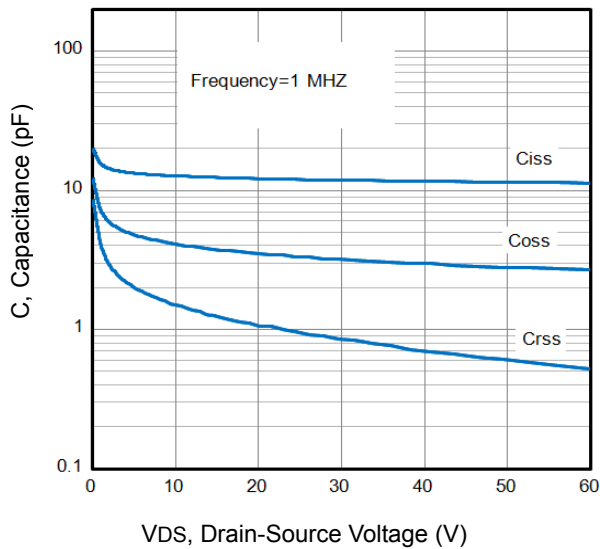


Fig7. Typical Capacitance Vs. Drain-Source Voltage

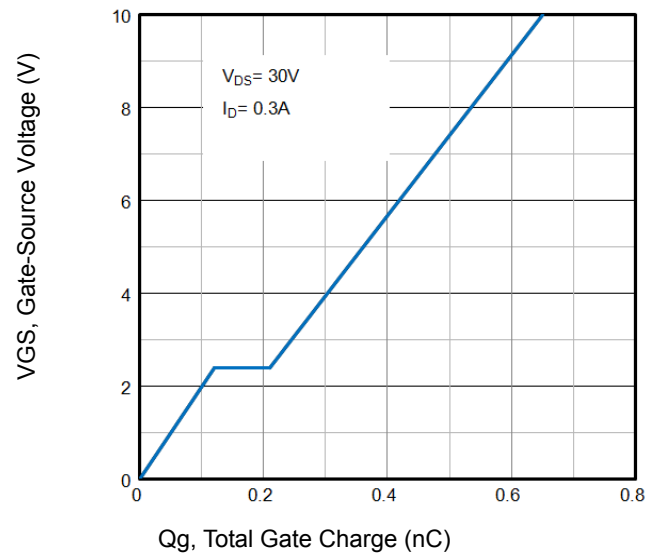


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

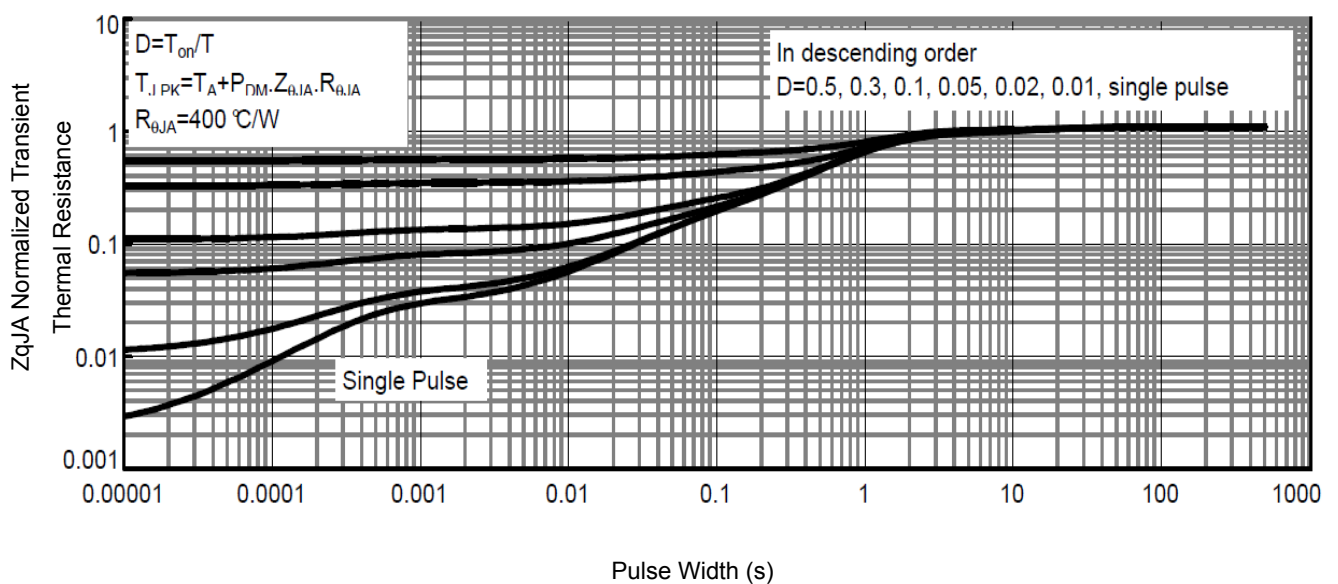


Fig9. Normalized Maximum Transient Thermal Impedance

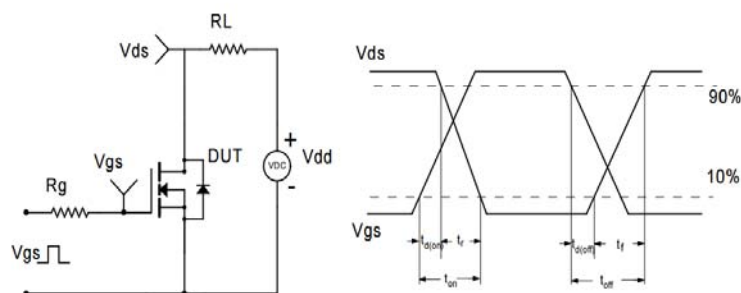
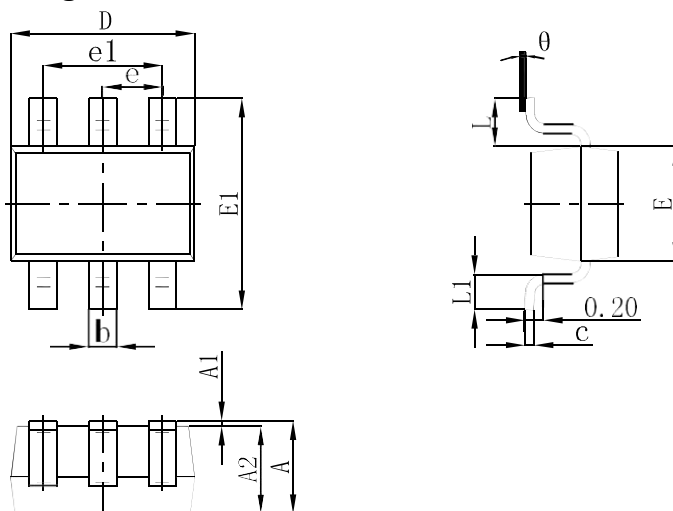
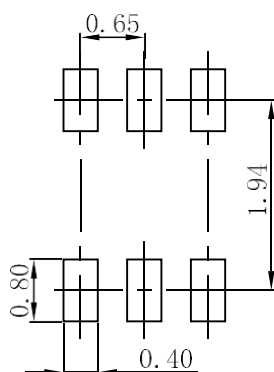


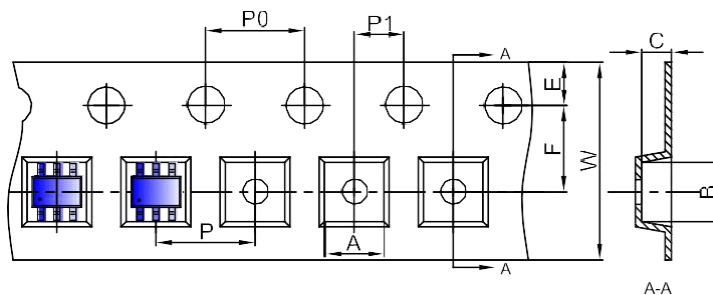
Fig10. Switching Time Test Circuit and waveforms

Dual N-Channel Enhancement Mode Field Effect Transistor
SOT-363 Package Outline Dimensions


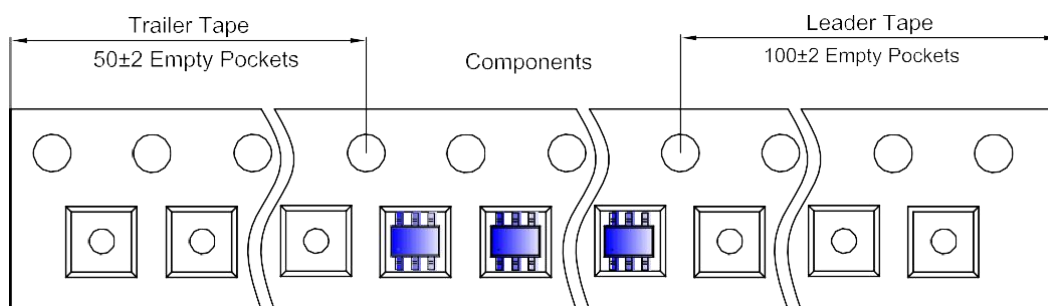
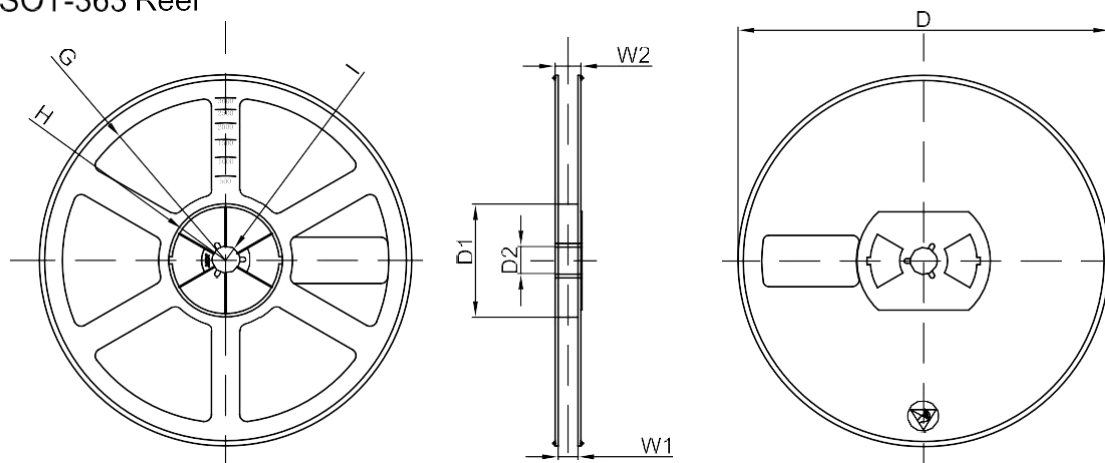
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-363 Suggested Pad Layout

Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

Dual N-Channel Enhancement Mode Field Effect Transistor
SOT-363 Embossed Carrier Tape


Dimensions are in millimeter											
Pkg type	A	B	C	d	E	F	P0	P	P1	W	
SOT-363	2.25	2.55	1.20	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00	

SOT-363 Tape Leader and Trailer

SOT-363 Reel


Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30