

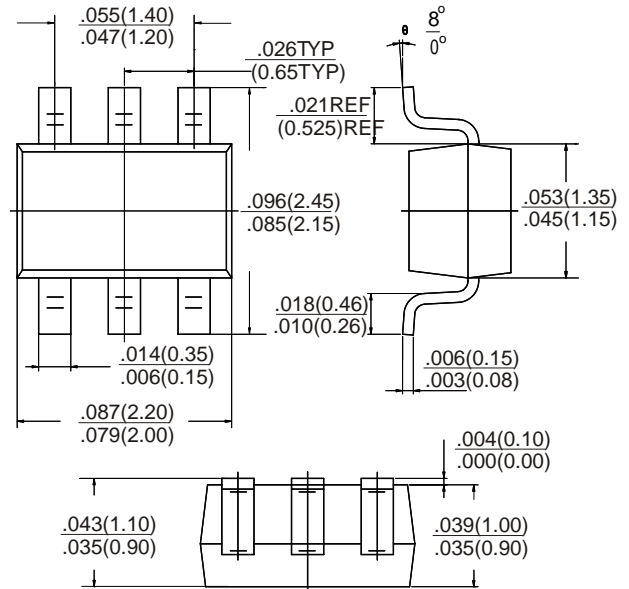
RoHS Compliant Product

Small Signal MOSFET
115 mAmps, 60 Volts
N-Channel SOT-363

SOT-363

MAXIMUM RATINGS

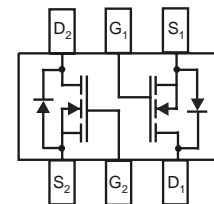
Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	60	Vdc
Drain-Gate Voltage ($R_{GS} = 1.0 \text{ M}\Omega$)	V_{DGR}	60	Vdc
Gate-Source Voltage - Continuous	V_{GS}	± 20	Vdc



Dimensions in inches and (millimeters)

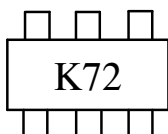
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note 3.) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	150 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	T_J, T_{stg}	-55 ~ +150	$^\circ\text{C}$



1. The Power Dissipation of the package may result in a lower continuous drain current.
2. Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.
3. FR-5 = $1.0 \times 0.75 \times 0.062$ in.
4. Alumina = $0.4 \times 0.3 \times 0.025$ in 99.5% alumina.

MARKING DIAGRAM



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

Characteristic	Symbol	Min	Typ	Max	Unit
----------------	--------	-----	-----	-----	------

OFF CHARACTERISTICS

Drain-Source Breakdown Voltage ($V_{GS} = 0, I_D = 10 \mu\text{A}$)	$V_{(BR)DSS}$	60	-	-	Vdc
Zero Gate Voltage Drain Current ($V_{GS} = 0, V_{DS} = 60 \text{ Vdc}$)	I_{DSS}	-	-	1.0 500	μA nA
Gate-Body Leakage Current, Forward ($V_{GS} = 20 \text{ Vdc}$)	I_{GSSF}	-	-	10	nA
Gate-Body Leakage Current, Reverse ($V_{GS} = -20 \text{ Vdc}$)	I_{GSSR}	-	-	-10	nA

ON CHARACTERISTICS (Note 2.)

Gate Threshold Voltage ($V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$)	$V_{GS(th)}$	1.0	-	2.0	Vdc
On-State Drain Current ($V_{DS} \geq 2.0 V_{DS(on)}, V_{GS} = 10 \text{ Vdc}$)	$I_{D(on)}$	0.5	1	-	A
Static Drain-Source On-State Resistance ($V_{GS} = 10 \text{ V}, I_D = 500 \text{ mA}$) $TC = 25^\circ\text{C}$ ($V_{GS} = 5.0 \text{ Vdc}, I_D = 50 \text{ mA}$) $TC = 25^\circ\text{C}$	$R_{DS(on)}$	-	-	13.5 7.5	Ohms
Forward Transconductance ($V_{DS} = 10 \text{ V}, I_D = 200 \text{ mA}$)	g_{FS}	80	-	-	ms

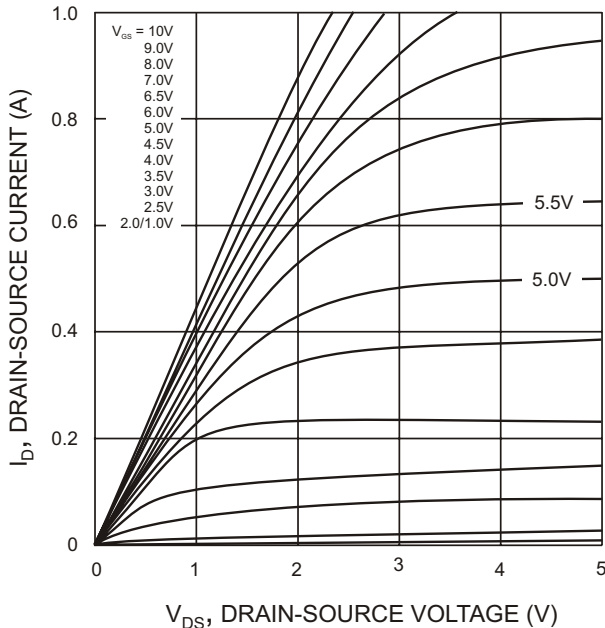
DYNAMIC CHARACTERISTICS

Input Capacitance ($V_{DS} = 25 \text{ Vdc}, V_{GS} = 0, f = 1.0 \text{ MHz}$)	C_{iss}	-	-	50	pF
Output Capacitance ($V_{DS} = 25 \text{ Vdc}, V_{GS} = 0, f = 1.0 \text{ MHz}$)	C_{oss}	-	-	25	pF
Reverse Transfer Capacitance ($V_{DS} = 25 \text{ Vdc}, V_{GS} = 0, f = 1.0 \text{ MHz}$)	C_{rss}	-	-	5.0	pF

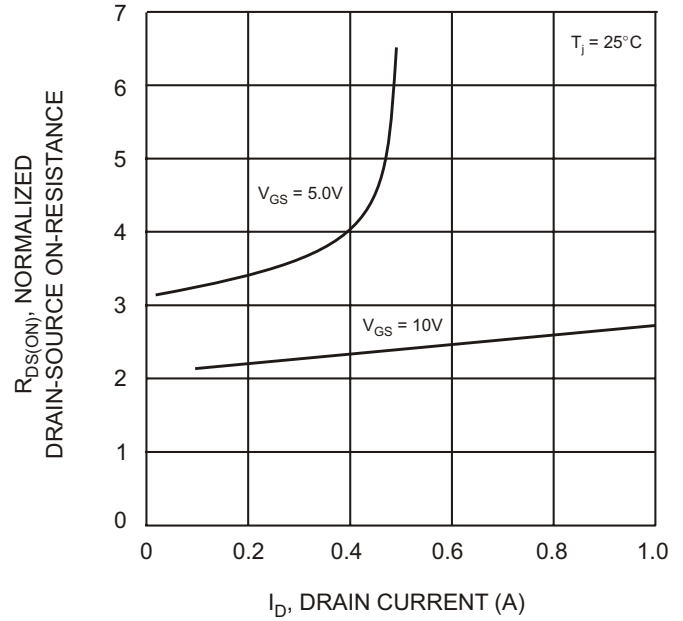
SWITCHING CHARACTERISTICS (Note 2.)

Turn-On Delay Time	($V_{DD} = 30 \text{ Vdc}, I_D \cong 200 \text{ mA},$ $R_G = 25 \Omega, R_L = 150 \Omega, V_{gen} = 10 \text{ V}$)	$t_{d(on)}$	-	-	20	ns
Turn-Off Delay Time		$t_{d(off)}$	-	-	20	ns

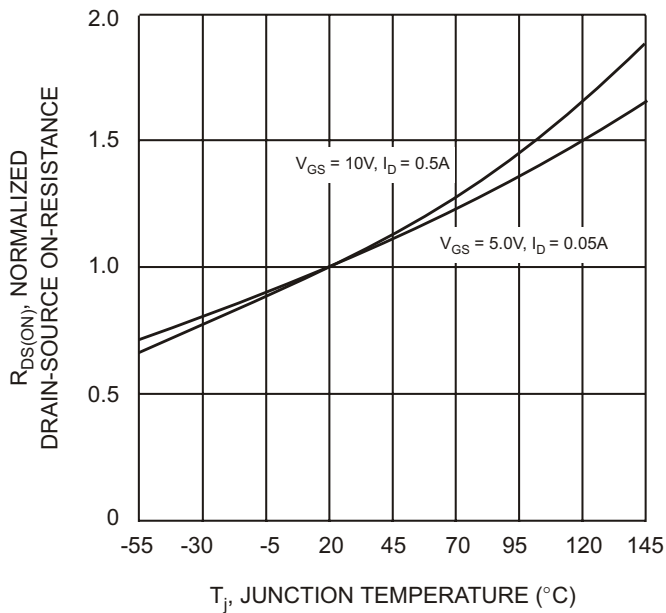
TYPICAL ELECTRICAL CHARACTERISTICS



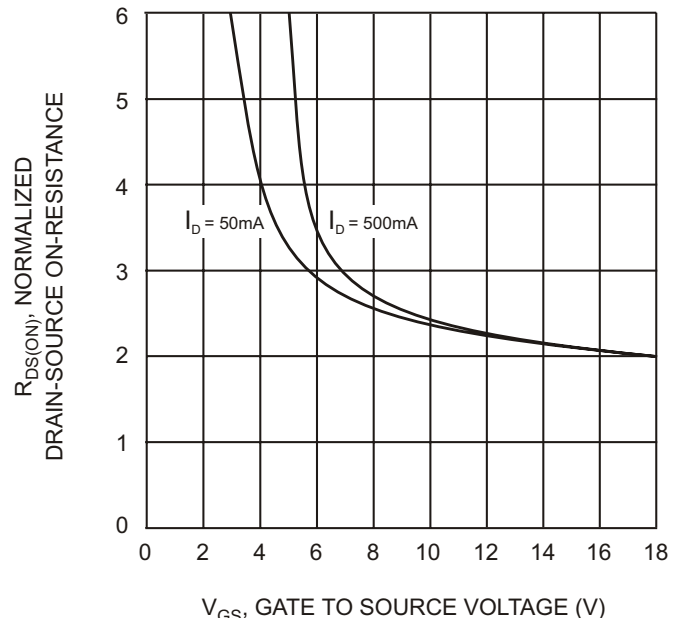
V_{DS} , DRAIN-SOURCE VOLTAGE (V)
Fig. 1 On-Region Characteristics



I_D , DRAIN CURRENT (A)
Fig. 2 On-Resistance vs Drain Current



T_J , JUNCTION TEMPERATURE ($^\circ C$)
Fig. 3 On-Resistance vs Junction Temperature



V_{GS} , GATE TO SOURCE VOLTAGE (V)
Fig. 4 On-Resistance vs. Gate-Source Voltage