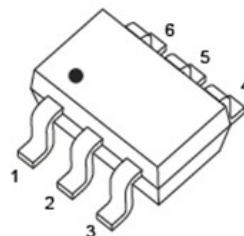


SOT-363 Plastic-Encapsulate MOSFETS

20V N-Channel Enhancement Mode MOSFET

$V_{(BR)DSS}$	$R_{DS(on)Max}$	$I_D MAX$
20V	380mΩ@4.5V	0.75A
	450mΩ@2.5V	

SOT-363



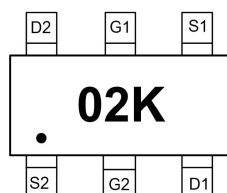
Feature

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability
- ESD protected : 2kV
- Load Switch for Portable Devices.
- DC/DC Converter.

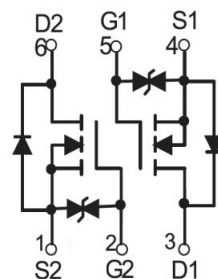
Mechanical Data

- SOT-363 Small Outline Plastic Package.
- Epoxy UL: 94V-0.
- Mounting Position: Any.

Marking



Equivalent circuit



MAXIMUM RATINGS ($T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	0.75	A
Power Dissipation	P_D	200	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{stg}	-55 ~ +150	

MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	20	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current($T_A=25^{\circ}\text{C}$)	$V_{DS}=20V$, $V_{GS}=0V$	--	--	1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 10V$, $V_{DS}=0V$	--	--	± 10	μA
$V_{GS(TH)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}$, $I_D=250\mu A$	0.3	0.65	1.0	V
$R_{DS(ON)}$	Drain-Source On-State Resistance	$V_{GS}=4.5V$, $I_D=0.5A$	--	250	380	m Ω
	Drain-Source On-State Resistance②	$V_{GS}=2.5V$, $I_D=0.4A$	--	350	450	m Ω

Dynamic Electrical Characteristics

C_{iss}	Input Capacitance	$V_{DS}=10V$, $V_{GS}=0V$, $f=1\text{MHz}$	--	79	--	pF
C_{oss}	Output Capacitance		--	13	--	pF
C_{rss}	Reverse Transfer Capacitance		--	9	--	pF
Q_g	Total Gate Charge	$V_{DS}=10V$, $I_D=0.3A$, $V_{GS}=4.5V$	--	5	--	nC
Q_{gs}	Gate-Source Charge		--	0.8	--	nC
Q_{gd}	Gate-Drain(" Miller ") Charge		--	1.2	--	nC

Switching Characteristics

$t_{d(on)}$	Turn on Delay Time	$V_{DS}=10V$, $I_D=0.5A$, $V_{GS}=4.5V$, $R_{GEN}=3\Omega$	--	6.7	--	ns
$t_{d(off)}$	Turn Off Delay Time		--	17.3	--	ns
t_r	Turn-on Rise Time		-	4.8	--	ns
t_f	Turn-off Fall Time		-	7.4	--	ns

Notes:

① Pulse width limited by maximum allowable junction temperature

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

Typical Characteristics

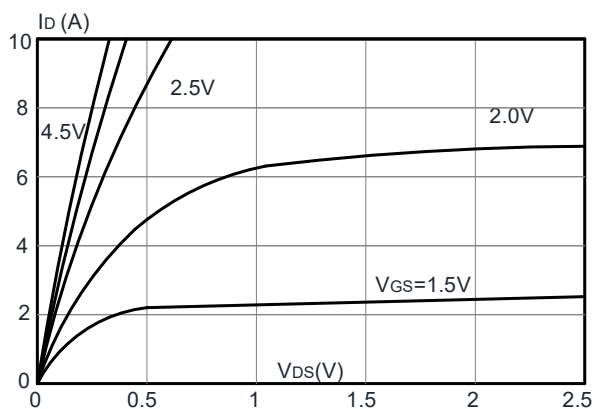


Figure1: Output Characteristics

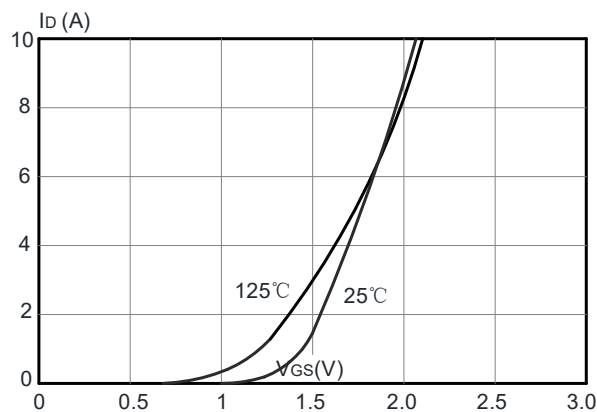


Figure 2: Typical Transfer Characteristics

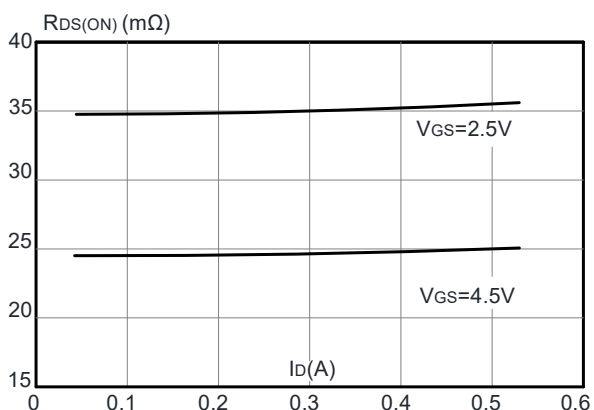


Figure 3: On-resistance vs. Drain Current

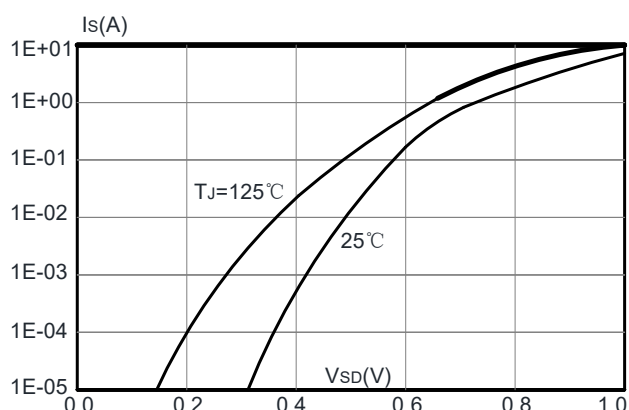


Figure 4: Body Diode Characteristics

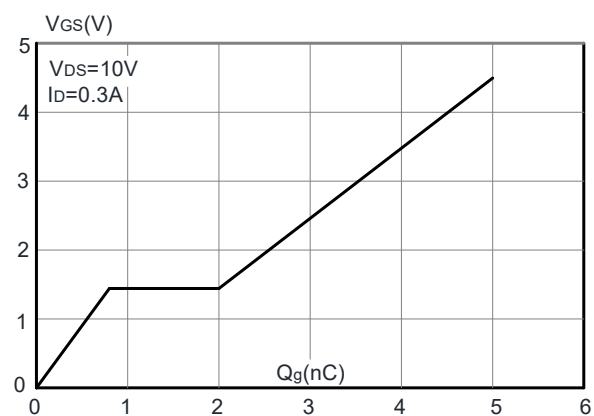


Figure 5: Gate Charge Characteristics

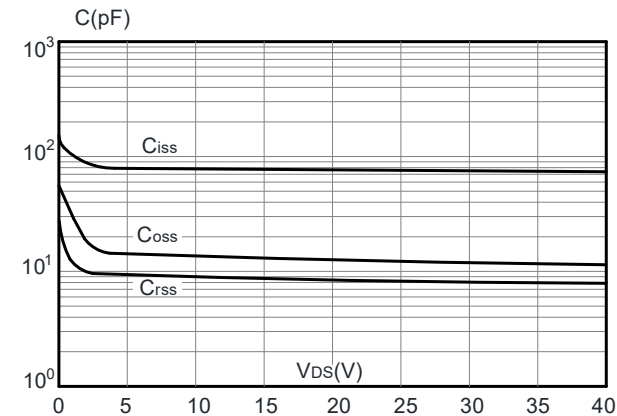
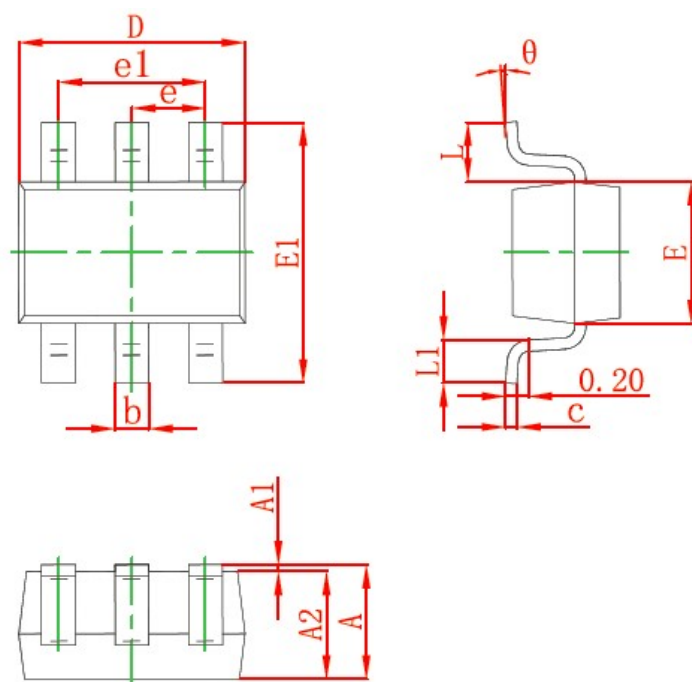


Figure 6: Capacitance Characteristics

The curves above are for reference only.

Outlitne Drawing

SOT-363 Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min	Max
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.100	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.400
e	0.650 TYP	
e1	1.200	1.400
L	0.525 REF	
L1	0.260	0.460
θ	0°	8°

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