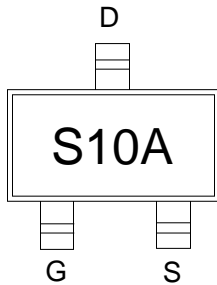


### Features

- Excellent package for good heat dissipation
- Ultra low gate charge
- Low reverse transfer capacitance
- Fast switching capability
- Avalanche energy specified

### Application

- Power switching application

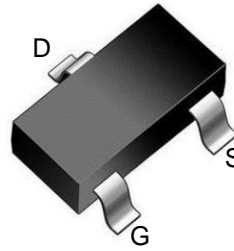


S10A: Device code

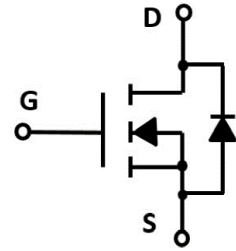
Marking and pin assignment

### Product Summary

$V_{DS}$	$R_{DS(ON)}$ MAX	$I_D$ MAX
60V	100mΩ@10V	3A
	150mΩ@4.5V	



SOT-23 top view



Schematic diagram



Pb-Free



RoHS



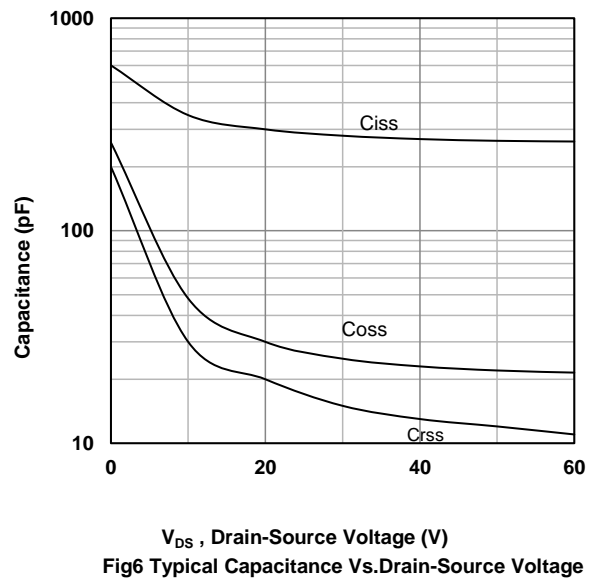
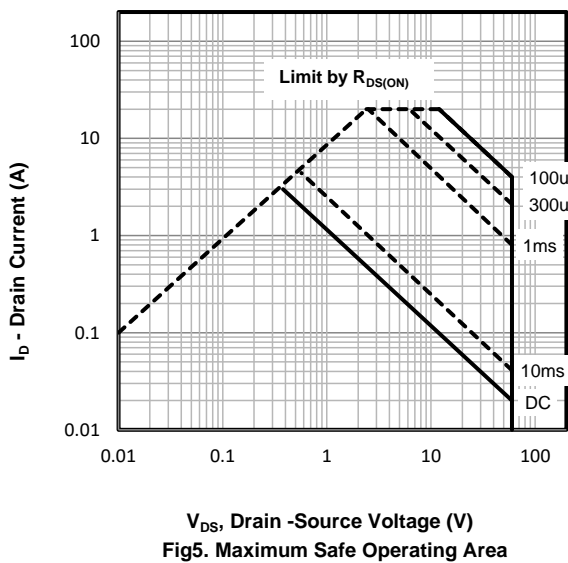
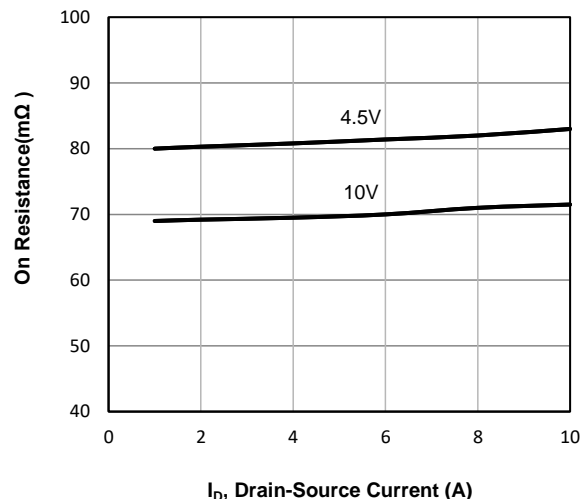
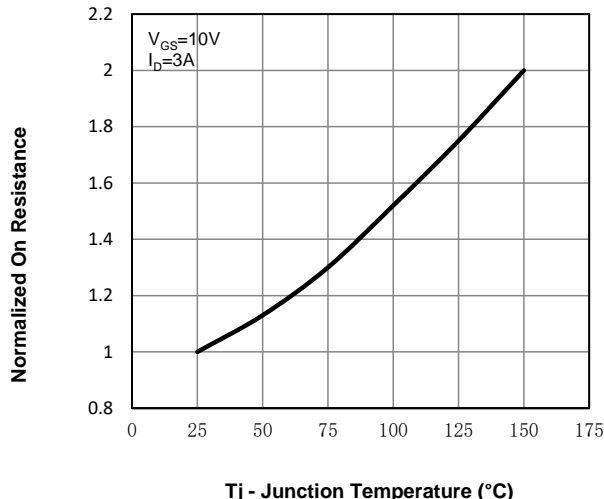
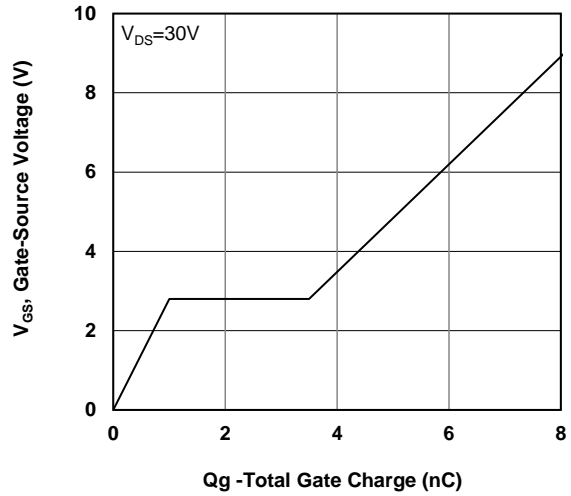
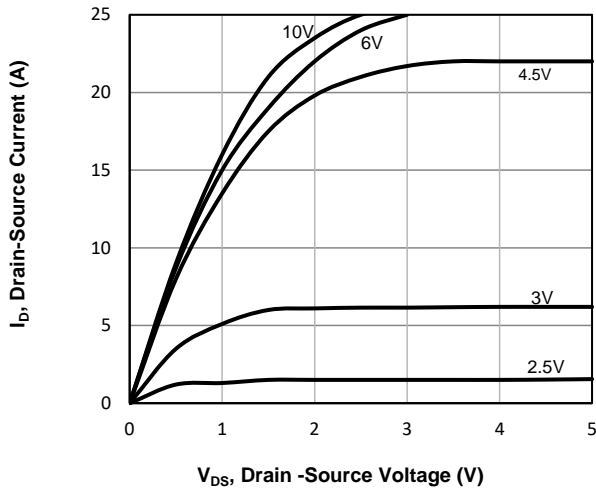
Halogen-Free

Absolute Maximum Ratings (TA=25°C unless otherwise noted)				
Symbol	Parameter		Rating	Unit
<b>Common Ratings (TC=25°C Unless Otherwise Noted)</b>				
$V_{DS}$	Drain-Source Breakdown Voltage		60	V
$V_{GS}$	Gate-Source Voltage		±20	V
$T_J$	Maximum Junction Temperature		150	°C
$T_{STG}$	Storage Temperature Range		-55 to 150	°C
$I_S$	Diode Continuous Forward Current	Tc=25°C	3	A
<b>Mounted on Large Heat Sink</b>				
$I_{DM}$	Pulse Drain Current Tested	Tc=25°C	12	A
$I_D$	Continuous Drain Current	Tc=25°C	3	A
$P_D$	Maximum Power Dissipation	Tc=25°C	0.35	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		375	°C/W

<b>Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)</b>						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
<b>Static Electrical Characteristics @ T<sub>J</sub> = 25°C (unless otherwise stated)</b>						
$BV_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	60	--	--	V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V$	--	--	1	$\mu A$
$I_{GSS}$	Gate-Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	$\pm 100$	nA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.5	2.5	V
$R_{DS(on)}$	Drain-Source On-State Resistance	$V_{GS}=10V, I_D=3A$	--	70	100	m $\Omega$
		$V_{GS}=4.5V, I_D=2A$	--	80	150	m $\Omega$
<b>Dynamic Electrical Characteristics @ T<sub>J</sub> = 25°C (unless otherwise stated)</b>						
$C_{ISS}$	Input Capacitance	$V_{DS}=30V, V_{GS}=0V, f=1MHz$	--	300	--	pF
$C_{OSS}$	Output Capacitance		--	16	--	pF
$C_{RSS}$	Reverse Transfer Capacitance		--	15	--	pF
<b>Switching Characteristics</b>						
$Q_g$	Total Gate Charge	$V_{DS}=30V, I_D=3A, V_{GS}=10V$	--	10.2	--	nC
$Q_{gs}$	Gate Source Charge		--	1.8	--	nC
$Q_{gd}$	Gate Drain Charge		--	2.2	--	nC
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=30V, I_D=3A, V_{GS}=10V, R_{GEN}=1\Omega$	--	4	--	nS
$t_r$	Turn-on Rise Time		--	10	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	12.5	--	nS
$t_f$	Turn-Off Fall Time		--	1.8	--	nS
<b>Source- Drain Diode Characteristics</b>						
$V_{SD}$	Forward on voltage	$T_J=25^\circ C, I_S=3A,$	--	0.8	1.2	V

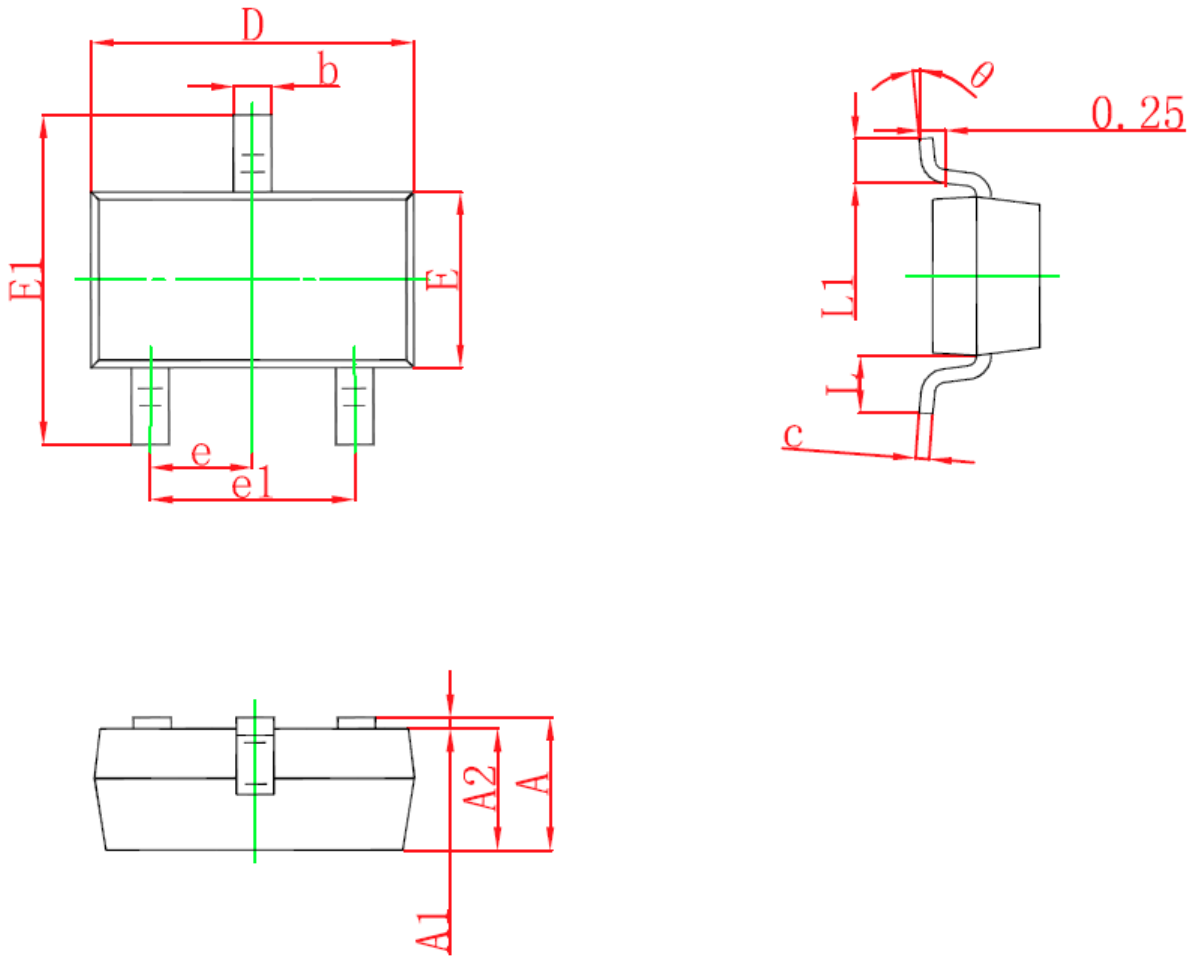


### Typical Operating Characteristics





**SOT-23 Package information**



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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