

20V/1.7A N-Channel MOSFET

Features

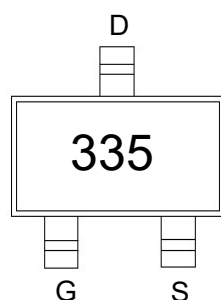
- High Density Cell Design for Extremely Low $R_{DS(on)}$
- Exceptional on-Resistance and Maximum DC Current Capability
- This Device is Pb-Free and Halogen Free

Product Summary

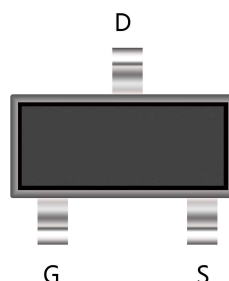
V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
20V	0.07 Ω @4.5V	1.7A
	0.1 Ω @2.5V	

Application

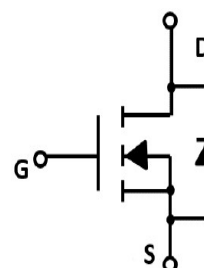
- DC-DC Converter
- Load Switch



335: Device code



SOT-23 top view



Schematic diagram



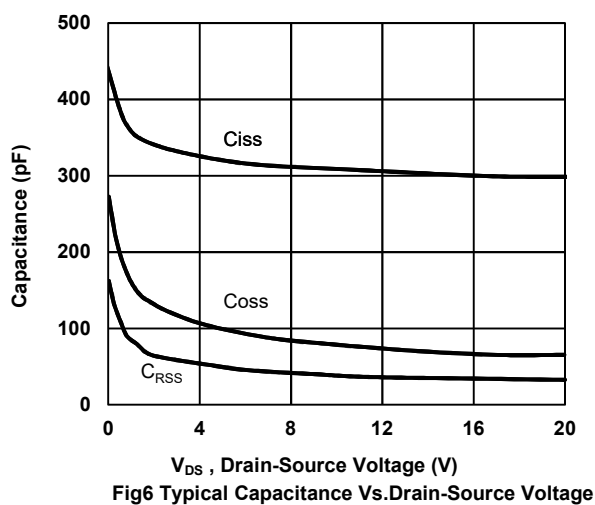
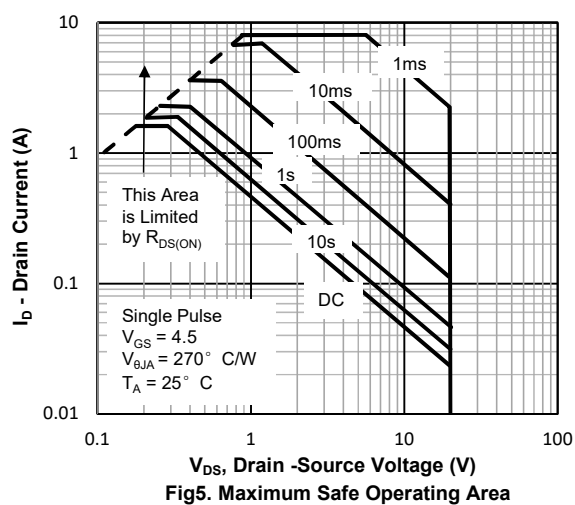
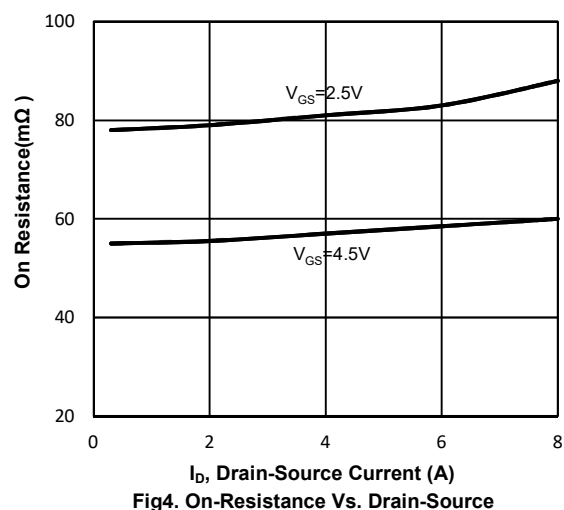
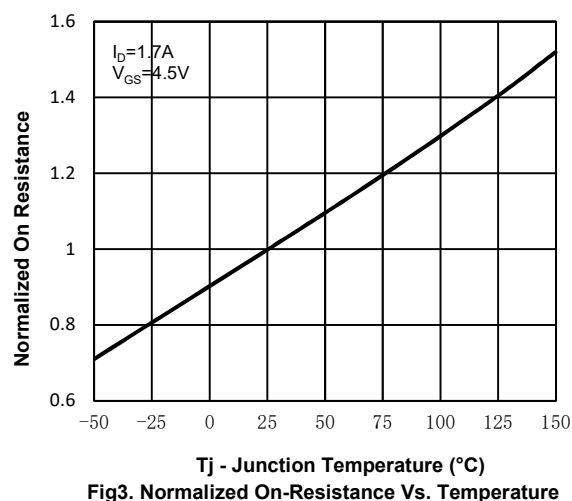
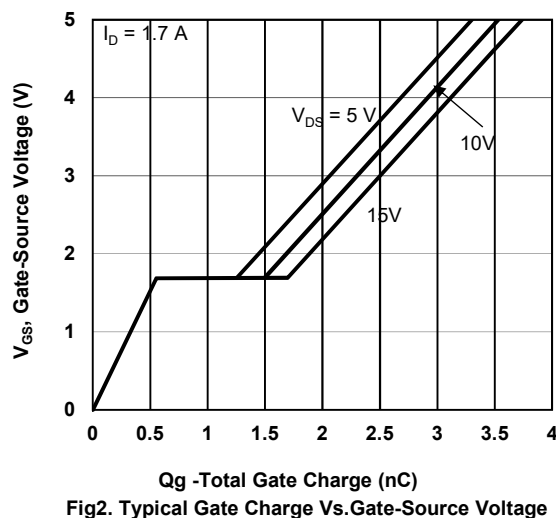
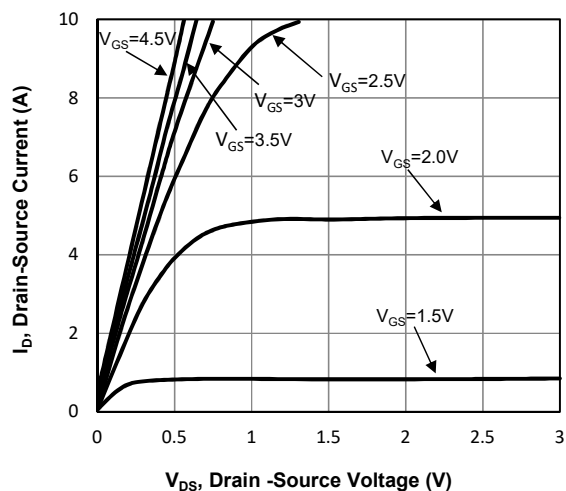
Halogen-Free

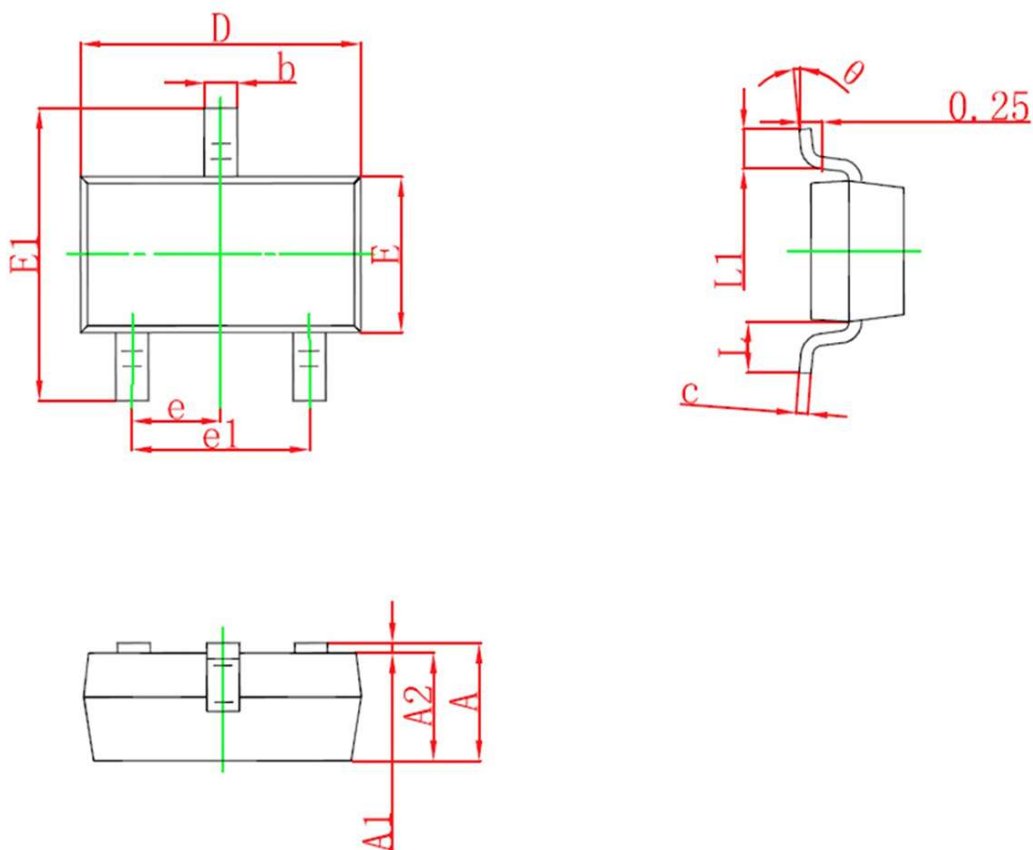
Marking and pin assignment

Absolute Maximum Ratings (TA=25°C unless otherwise noted)				
Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		20	V
V _{GS}	Gate-Source Voltage		±12	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-50 to 155	°C
I _S	Diode Continuous Forward Current	Tc=25°C	1.7	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	8	A
I _D	Continuous Drain Current	Tc=25°C	1.7	A
P _D	Maximum Power Dissipation	Tc=25°C	0.5	W
R _{θJA}	Thermal Resistance Junction-Ambient		250	°C/W

Electrical Characteristics (TJ=25°C unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	20	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =16V, V _{GS} =0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±8V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.4	0.9	1.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =1.7 A	--	0.055	0.07	Ω
		V _{GS} =2.5V, I _D =1.5 A	--	0.078	0.1	Ω
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, f=1MHz	--	310	--	pF
C _{OSS}	Output Capacitance		--	80	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	40	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =10V, I _D =1.7A, V _{GS} =4.5V	--	3.5	5	nC
Q _{gs}	Gate Source Charge		--	0.55	--	nC
Q _{gd}	Gate Drain Charge		--	0.95	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =1.7A, V _{GS} =4.5V, R _{GEN} =6Ω	--	5	15	nS
t _r	Turn-on Rise Time		--	8.5	17	nS
t _{d(off)}	Turn-Off Delay Time		--	11	20	nS
t _f	Turn-Off Fall Time		--	3	10	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	V _{GS} =0V, I _S =0.17A	--	--	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°