

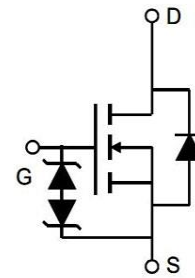
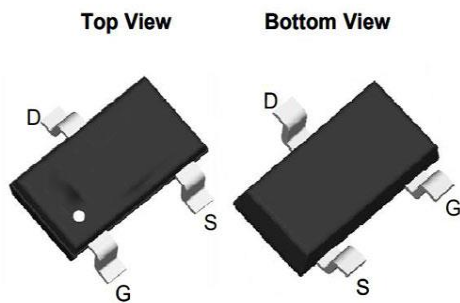
General Description

20V /6.5A Single N Power MOSFET

 Very low on-resistance $R_{DS(on)}$ @ $V_{GS}=4.5V$

Pb-free lead plating; RoHS compliant

V_{DS}	20	V
$R_{DS(on),TYP@V_{GS}=10V}$	19.0	m Ω
$R_{DS(on),TYP@V_{GS}=4.5}$	26.0	m Ω
I_D	6.5	A



Part ID	Package Type	Marking	Tape and reel information
AC3416	SOT23-3	3416	3000


 100% UIS Tested
 100% kg tested

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	8	$\pm V$
Continuous Drain Current ^A	I_D	$T_A=25^\circ C$	A
		$T_A=70^\circ C$	
Pulsed Drain Current ^B	I_{DM}	10.4	
Avalanche Current ^G	I_{AR}	2.1	
Repetitive avalanche energy $L=0.1mH$ ^G	E_{AR}	4.8	mJ
Power Dissipation ^A	P_D	$T_A=25^\circ C$	W
		$T_A=70^\circ C$	
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$

Thermal Characteristics

Parameter	Symbol	Typ	Max	Units
Maximum Junction-to-Ambient ^A	$R_{\theta JA}$	55	82	$^\circ C/W$
Maximum Junction-to-Ambient ^A		Steady State	110	132
Maximum Junction-to-Lead ^C	$R_{\theta JL}$	33	52	$^\circ C/W$

**STATIC PARAMETERS**

Symbol	Parameter	Conditions	Min	Typ	Max	Units
BV _{DSS}	Drain-Source Breakdown Voltage	I _D = -250uA, V _{GS} = 0V	20			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =20V, V _{GS} =0V			1	uA
					5	
I _{GSS}	Gate-Body leakage current	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} I _D = 250μA	0.6	0.8	1.1	V
R _{DS(on)}	Static Drain-Source On-Resistance	V _{GS} =-4.5V, I _D =6.5A		19.0	22.0	mΩ
		V _{GS} =2.5V, I _D =6.5A		26.0	34.0	
g _{FS}	Forward Transconductance	V _{DS} =5V, I _D =6.5A		93		S
V _{SD}	Diode Forward Voltage	I _S =1A, V _{GS} =28V		0.72	1	V
I _S	Maximum Body-Diode Continuous Current				6.5	A

DYNAMIC PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Units
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =15V, f=1MHz		1295	1579	pF
C _{oss}	Output Capacitance			160	196	pF
C _{rss}	Reverse Transfer Capacitance			87	103	pF
R _g	Gate resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz			1.3	Ω

SWITCHING PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Q _g (10V)	Total Gate Charge	V _{GS} =10V, V _{DS} =15V, I _D =6.5A		10		nC
Q _g 4.5V)	Total Gate Charge			5		
Q _{gs}	Gate Source Charge			1.82		
Q _{gd}	Gate Drain Charge			2.6		
t _{D(on)}	Turn-On DelayTime	V _{GS} =10V, V _{DS} =15V, R _L =0.75Ω, R _{GEN} =3Ω		15.5		ns
t _r	Turn-On Rise Time			12.4		
t _{D(off)}	Turn-Off DelayTime			43.4		
t _f	Turn-Off Fall Time			13.95		
t _{rr}	Body Diode Reverse Recovery Time	I _F =-8A, dI/dt=500A/μs		31		ns
Q _{rr}	Body Diode Reverse Recovery Charge	I _F =18A, dI/dt=500A/μs		6.8		nC

