

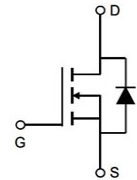
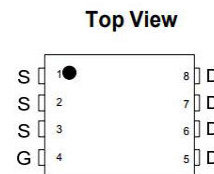
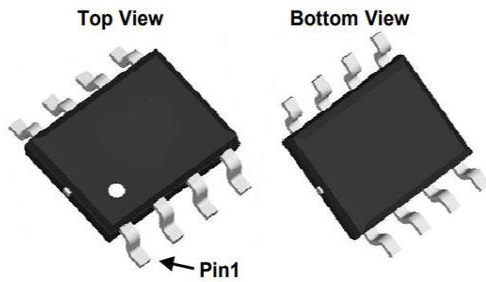
General Description

40V /6A Complementary NP Power MOSFET

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

Pb-free lead plating; RoHS compliant

V_{DS}	40	V
$R_{DS(on),TYP@V_{GS}=10V}$	23.0	m Ω
$R_{DS(on),TYP@V_{GS}=4.5}$	35.2	m Ω
I_D	6	A



Part ID	Package Type	Marking	Tape and reel information
AC4614B	SOP8	4614	3000



100% UIS Tested
100% kg tested

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	20	$\pm V$
Continuous Drain Current ^A	I_D	$T_A=25^\circ C$	A
		$T_A=70^\circ C$	
Pulsed Drain Current ^B	I_{DM}	9.6	A
Avalanche Current ^G	I_{AR}	1.9	
Repetitive avalanche energy $L=0.1mH$ ^G	E_{AR}	4.4	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	$R_{\theta JA}$	95	142	$^\circ C/W$
Maximum Junction-to-Ambient ^A		Steady State	190	
Maximum Junction-to-Lead ^c	$R_{\theta JL}$	57	91	$^\circ C/W$

**STATIC PARAMETERS**

Symbol	Parameter	Conditions	Min	Typ	Max	Units
BV _{DSS}	Drain-Source Breakdown Voltage	I _D = -250uA, V _{GS} = 0V	40			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =40V, 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	1.5	2.3	3	V
R _{DS(on)}	Static Drain-Source On-Resistance	V _{GS} =-10V, I _D =6A		23.0	32.0	mΩ
		V _{GS} =4.5V, I _D =6A		35.2	45.8	
g _{FS}	Forward Transconductance	V _{DS} =5V, I _D =6A		87		S
V _{SD}	Diode Forward Voltage	I _S =1A, V _{GS} =22V		0.72	1	V
I _S	Maximum Body-Diode Continuous Current				6	A

DYNAMIC PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Units
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =15V, f=1MHz		516	629	pF
C _{oss}	Output Capacitance			82	100	pF
C _{rss}	Reverse Transfer Capacitance			43	51	pF
R _g	Gate resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz			0.7	Ω

SWITCHING PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Q _g (10V)	Total Gate Charge	V _{GS} =10V, V _{DS} =15V, I _D =6A		4.3		nC
Q _g 4.5V)	Total Gate Charge			2.15		
Q _{gs}	Gate Source Charge			0.98		
Q _{gd}	Gate Drain Charge			1.4		
t _{D(on)}	Turn-On DelayTime	V _{GS} =10V, V _{DS} =15V, R _L =0.75Ω, R _{GEN} =3Ω		9		ns
t _r	Turn-On Rise Time			7.2		
t _{D(off)}	Turn-Off DelayTime			25.2		
t _f	Turn-Off Fall Time			8.1		
t _{rr}	Body Diode Reverse Recovery Time	I _F =-8A, dI/dt=500A/μs		18		ns
Q _{rr}	Body Diode Reverse Recovery Charge	I _F =18A, dI/dt=500A/μs		10		nC

