

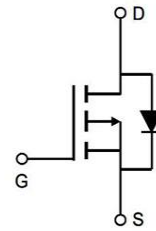
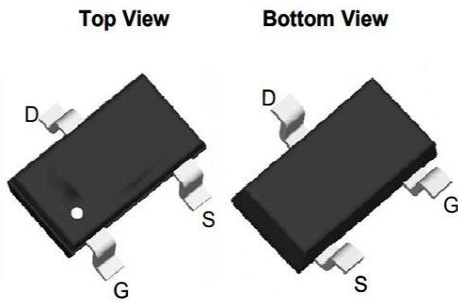
General Description

-30V /-2.6A Single P Power MOSFET

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

Pb-free lead plating; RoHS compliant

V_{DS}	-30	V
$R_{DS(on),TYP@VGS=10V}$	105.0	mΩ
$R_{DS(on),TYP@VGS=4.5}$	165.0	mΩ
I_D	-2.6	A



Part ID	Package Type	Marking	Tape and reel information
AC3407	SOT23-3	3407	3000



100% UIS Tested
100% kg tested

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	12	±V
Continuous Drain Current ^A	I_D	$T_A=25^\circ\text{C}$	A
		$T_A=70^\circ\text{C}$	
Pulsed Drain Current ^B	I_{DM}	-4.2	
Avalanche Current ^G	I_{AR}	-0.8	
Repetitive avalanche energy $L=0.1\text{mH}$ ^G	E_{AR}	-1.9	mJ
Power Dissipation ^A	P_D	$T_A=25^\circ\text{C}$	W
		$T_A=70^\circ\text{C}$	
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C

Thermal Characteristics

Parameter	Symbol	Typ	Max	Units
Maximum Junction-to-Ambient ^A	$R_{\theta JA}$	375	562	°C/W
Maximum Junction-to-Ambient ^A		Steady State	750	
Maximum Junction-to-Lead ^C	$R_{\theta JL}$	225	360	°C/W

**STATIC PARAMETERS**

Symbol	Parameter	Conditions	Min	Typ	Max	Units
BV _{DSS}	Drain-Source Breakdown Voltage	I _D = -250uA, V _{GS} = 0V	-30			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-30V, 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	-0.7	-1.1	-1.4	V
R _{DS(on)}	Static Drain-Source On-Resistance	V _{GS} =-10V, I _D =-2.6A		105.0	150.0	mΩ
		V _{GS} =-4.5V, I _D =-2.6A		165.0	214.5	
g _{FS}	Forward Transconductance	V _{DS} =-5V, I _D =-2.6A		63		S
V _{SD}	Diode Forward Voltage	I _S =-1A, V _{GS} =0V		-0.72	-1	V
I _S	Maximum Body-Diode Continuous Current				-2.6	A

DYNAMIC PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Units
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-15V, f=1MHz		260	317	pF
C _{oss}	Output Capacitance			37	45	pF
C _{rss}	Reverse Transfer Capacitance			20	23	pF
R _g	Gate resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz			0.5	Ω

SWITCHING PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Q _g (10V)	Total Gate Charge	V _{GS} =-10V, V _{DS} =-15V, I _D =-2.6A		2.8		nC
Q _g 4.5V)	Total Gate Charge			1.4		
Q _{gs}	Gate Source Charge			0.7		
Q _{gd}	Gate Drain Charge			1		
t _{D(on)}	Turn-On DelayTime	V _{GS} =-10V, V _{DS} =-15V, R _L =0.75 Ω, R _{GEN} =3Ω		5.75		ns
t _r	Turn-On Rise Time			4.6		
t _{D(off)}	Turn-Off DelayTime			16.1		
t _f	Turn-Off Fall Time			5.175		
t _{rr}	Body Diode Reverse Recovery Time	I _F =-8A, dI/dt=500A/μs		11.5		ns
Q _{rr}	Body Diode Reverse Recovery Charge	I _F =18A, dI/dt=500A/μs		4.5		nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

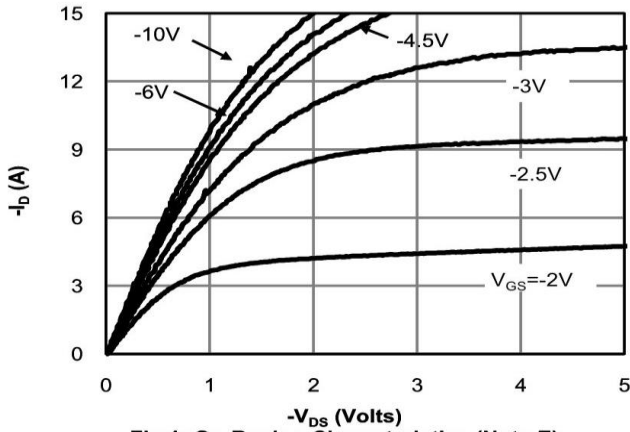


Fig 1: On-Region Characteristics (Note E)

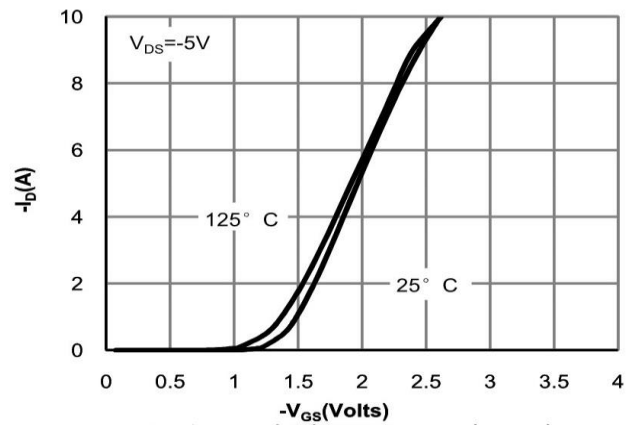


Figure 2: Transfer Characteristics (Note E)

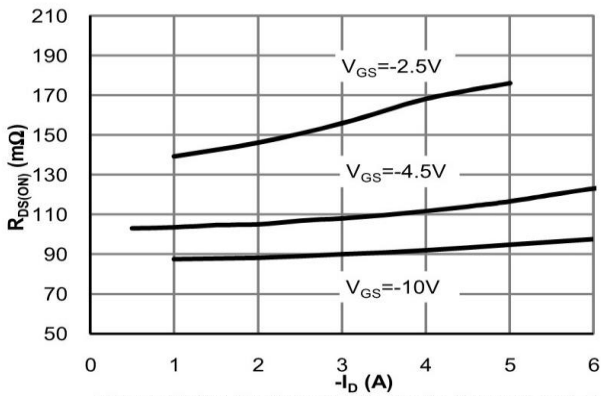


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

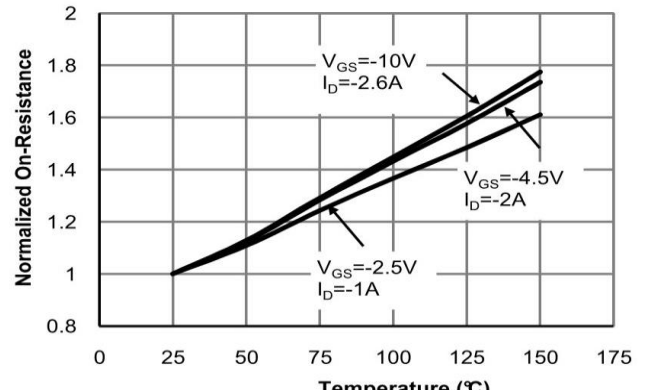


Figure 4: On-Resistance vs. Junction Temperature (Note E)

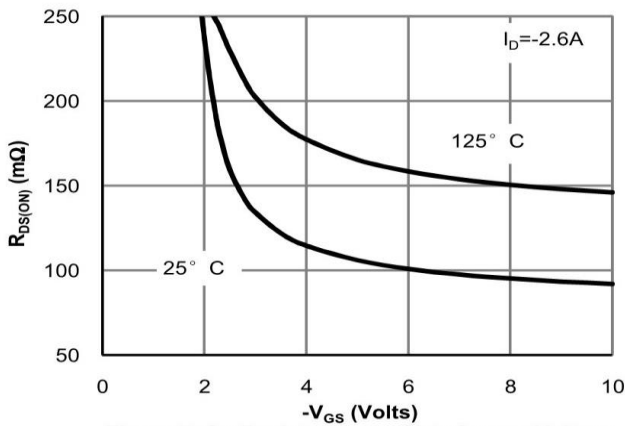


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

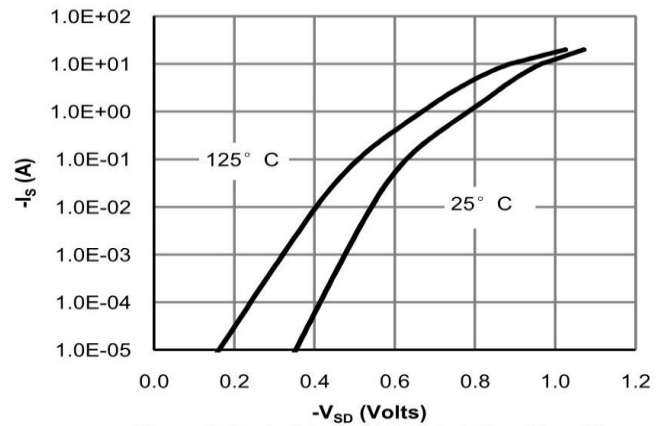


Figure 6: Body-Diode Characteristics (Note E)

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

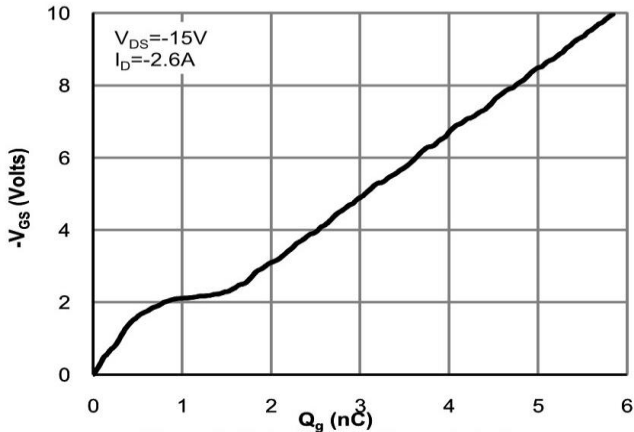


Figure 7: Gate-Charge Characteristics

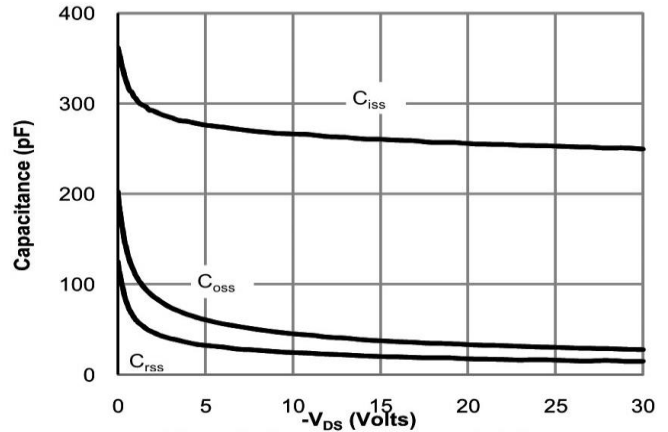


Figure 8: Capacitance Characteristics

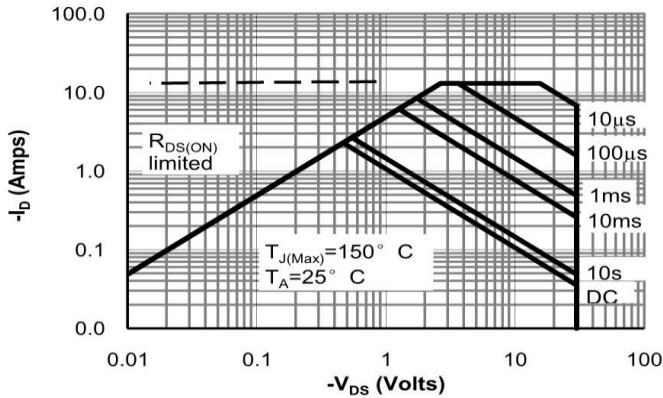


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

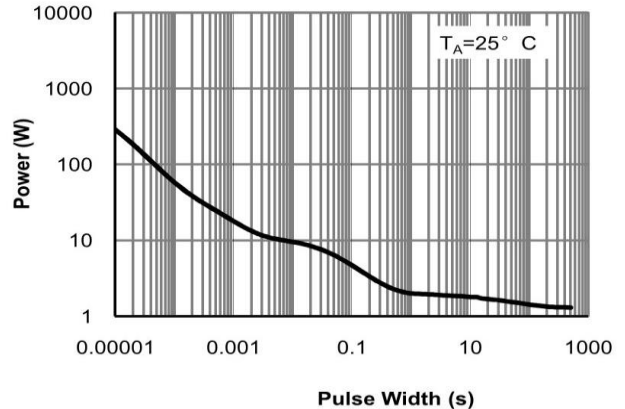


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

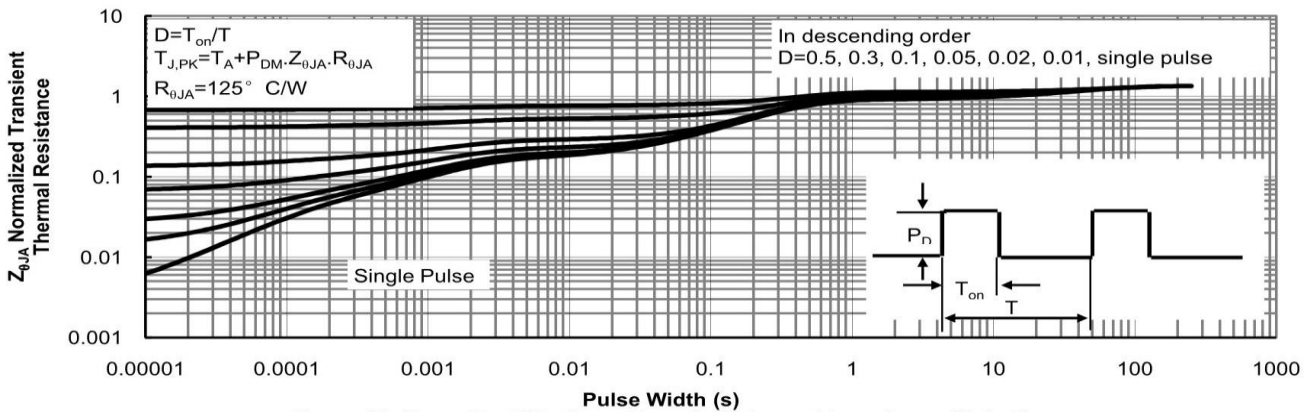


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)