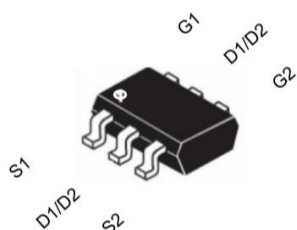


Product Summary

- $V_{DS} = 20V, I_D = 6A$
 $R_{DS(ON)}, 19.5m\Omega (Typ) @ V_{GS} = 4.5V$
 $R_{DS(ON)}, 25m\Omega (Typ) @ V_{GS} = 2.5V$
- Trench Power Technology
- Low $R_{DS(ON)}$
- Low Gate Charge
- Optimized for Fast-switching Applications

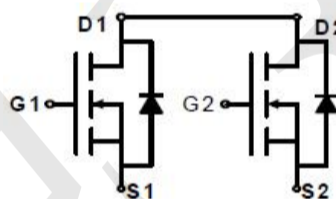
Package and Pin Configuration



Application

- Synchronous Rectification in DC/DC and AC/DC Converters
- Isolated DC/DC Converters in Telecom and Industrial

Circuit diagram



Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 10	V
Drain Current-Continuous ^{Note3}	$TC = 25^\circ C$	I_D	6	A
	$TC = 70^\circ C$		4.8	A
Drain Current-Pulsed ^{Note1}		I_{DM}	24	A
Avalanche Energy ^{Note4}		E_{AS}	7.4	mJ
Maximum Power Dissipation	$TC = 25^\circ C$	P_D	1.5	W
Storage Temperature Range		T_{STG}	-55 to +150	$^\circ C$
Operating Junction Temperature Range		T_J	-55 to +150	$^\circ C$

Thermal Resistance

Parameter	Symbol	Min.	Typ.	Max	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	-	14.4	-	$^\circ C/W$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	-	83	-	$^\circ C/W$

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

OFF CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_{DS}=250\mu A$	20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$	-	-	± 100	nA

ON CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	0.5	0.7	1.2	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_{DS}=3A$	-	19.5	25	m Ω
		$V_{GS}=2.5V, I_{DS}=3A$	-	25	31.5	

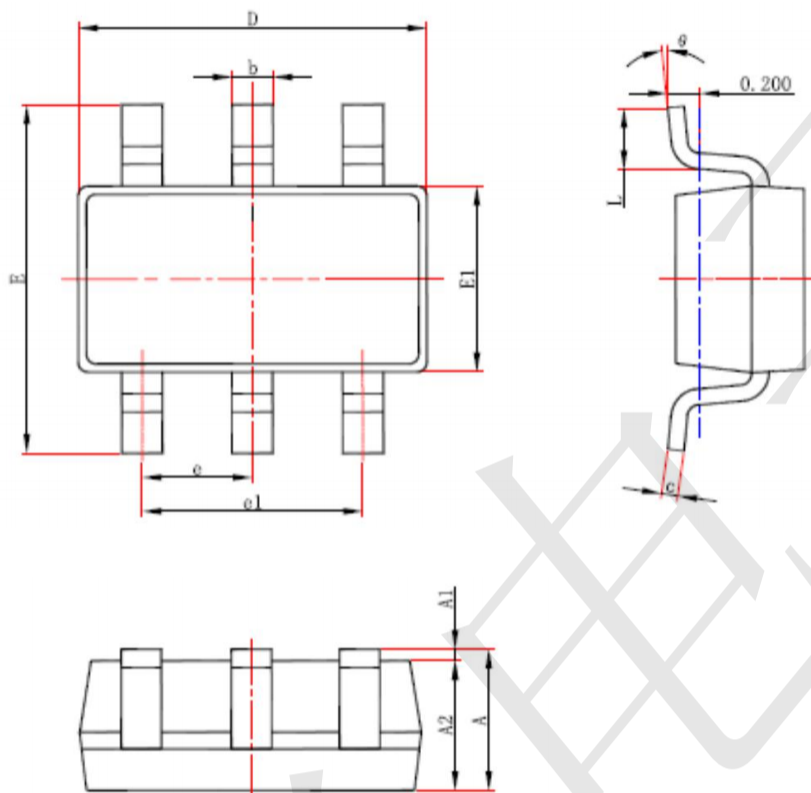
DYNAMIC CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input Capacitance	C_{ISS}	$V_{DS}=10V, V_{GS}=0V,$ $f=1\text{MHz}$	-	466	-	pF
Output Capacitance	C_{OSS}		-	65	-	
Reverse Transfer Capacitance	C_{rss}		-	58	-	

SWITCHING CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Turn-On Delay Time	$T_{d(on)}$	$V_{GS}=4.5V, V_{DS}=10V,$ $R_{GEN}=2.5\Omega$ $I_D=6A$	-	15	-	ns
Rise Time	t_r		-	17	-	
Turn-Off Delay Time	$T_{d(off)}$		-	42	-	
Fall Time	t_f		-	10	-	
Total Gate Charge at 10V	Q_g	$V_{DS}=10V, I_{DS}=6A,$ $V_{GS}=10V$	-	5.7	-	nC
Gate to Source Gate Charge	Q_{gs}		-	0.8	-	
Gate to Drain "Miller" Charge	Q_{gd}		-	1.4	-	

DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_{DS}=6A$	-	-	1.2	V

Package Outline Dimensions

SOT23-6



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°