

Dual N-Channel Enhancement Mode MOSFET

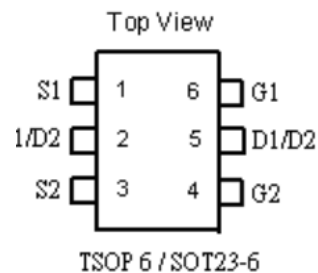
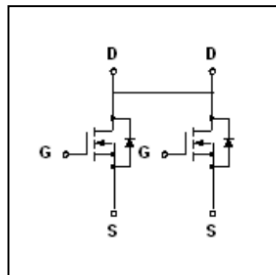
FEATURES

- 20V 5A N-channel Trench Mosfet
- $R_{DS(on)} \leq 27m\Omega$ @ $V_{GS}=4.5V$, $I_D=5A$
- $R_{DS(on)} \leq 36m\Omega$ @ $V_{GS}=2.5V$, $I_D=3A$
- Low gate Charge
- Fast switching capability
- High reliability and rugged

APPLIACTION

- Portable Equipment
- Battery Powered System

SYMBOL



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	20	V
Gate-Source Voltage		V_{GSS}	± 12	V
Drain Current(Note1)	Continuous	I_D	5	A
	Pulsed	I_{DM}	20	A
Power Dissipation ($T_A=25^\circ C$) (Note 2)	$T_A=25^\circ C$	P_D	0.83	W
	$T_A=100^\circ C$		0.3	
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	150	$^\circ C/W$
Maximum Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{STG}	-55 to 150	$^\circ C$

Note: 1. Pulse Test: Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$

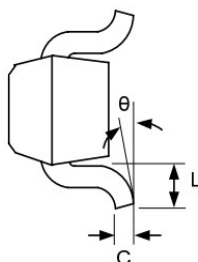
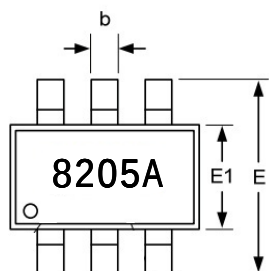
2. Pulse width limited by $T_J(MAX)$

ELECTRICAL CHARACTERISTICS ($T_J=25^\circ C$, unless otherwise Noted)

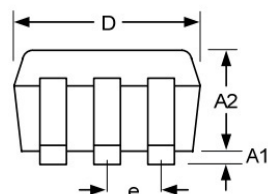
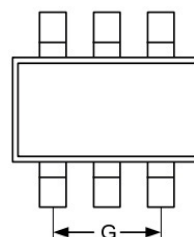
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$, $I_D=250\mu A$	20			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=20V$, $V_{GS}=0V$			1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=250\mu A$	0.5		1.2	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V$, $I_D=5.0A$		22	27	$m\Omega$
		$V_{GS}=2.5V$, $I_D=3A$		28	36	$m\Omega$

OUTLINE DIMENSION (SOT23-6)

View from Top Side



View from Bottom Side



SYMBOLS	DIMENSION (MM)			DIMENSION (MIL)		
	MIN	NOM	MAX	MIN	NOM	MAX
A1	0.02	0.05	0.1	0.80	2.00	4.00
A2	1.00	1.10	1.30	40.0	44.0	52.0
b	0.35	0.38	0.45	14.0	15.0	18.0
C	0.10	0.15	0.20	4.0	6.0	8.0
D	2.90	3.00	3.10	116	120	124
E	2.70	2.80	3.00	108	112	120
E1	1.50	1.60	1.70	60.0	64.0	68.0
e	0.95			38		
G	1.90			76		
L	0.35	0.40	0.55	14.0	16.0	22.0
theta	0°	8°	-	0°	8°	-

ELECTRICAL CHARACTERISTICS ($T_J=25^{\circ}\text{C}$, unless otherwise Noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	VDS=10V, VGS=0V, f=1.0MHz		630		pF
Output Capacitance	C _{OSS}			312		pF
Reverse Transfer Capacitance	C _{RSS}			145		pF
SWITCHING PARAMETERS						
Turn-ON Delay Time (Note)	t _{D(ON)}	VGS=4V, VDS=10V, RD=10Ω, RG=10Ω, ID=1A		18		ns
Turn-ON Rise Time	t _R			5		ns
Turn-OFF Delay Time	t _{D(OFF)}			42		ns
Turn-OFF Fall-Time	t _F			19		ns
Total Gate Charge(Note)	Q _G	VDS =20V, VGS =5V, ID =5.0A		23		nC
Gate Source Charge	Q _{GS}			4.5		nC
Gate Drain Charge	Q _{GD}			6.8		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	IS=1.7A, VGS=0V		1.2		V
Diode Continuous Forward Current	I _S	VD=VG, VS=1.3V		1.5		A

TYPICAL CHARACTERISTICS
