

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	80mΩ@10V	5A
	90mΩ@4.5V	

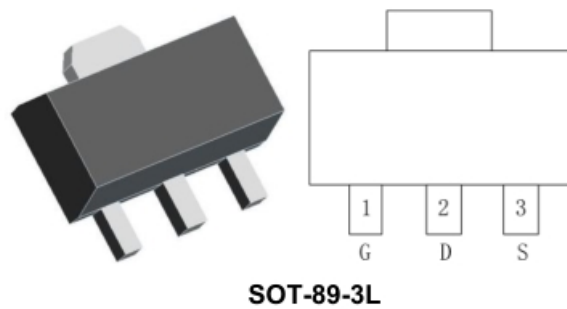
Feature

- High power and current handling capability
- Surface mount package

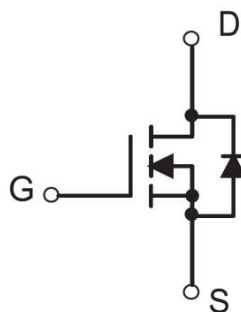
Applications

- Battery Switch
- DC/DC Converter

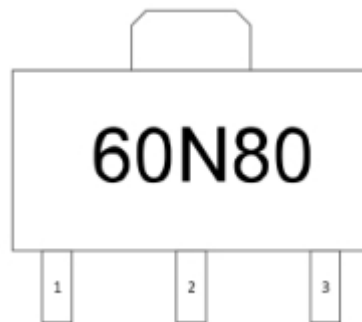
Package



Circuit diagram



Marking



Absolute maximum ratings

($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	5	A
Pulsed Drain Current ¹⁾	I_{DM}	15	A
Maximum Power Dissipation	P_D	1.5	W
Thermal Resistance from Junction to Ambient ²⁾	$R_{\theta JA}$	83.3	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG.}$	-55 To 150	$^{\circ}\text{C}$

Electrical characteristics

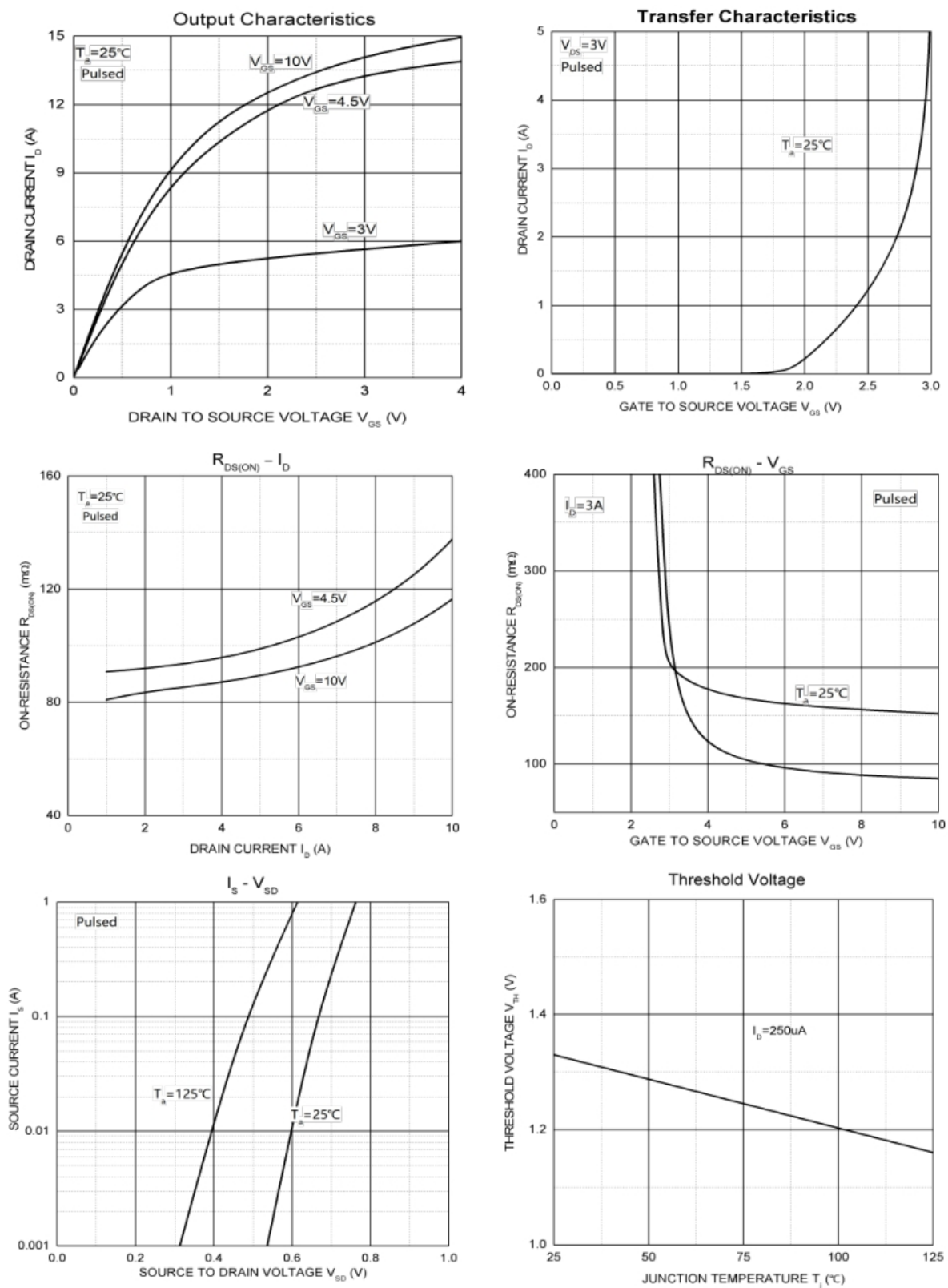
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} = 0V			1	uA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	uA
Gate Threshold Voltage ³⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.5	2.2	V
Drain-Source On-State Resistance ³⁾	R _{DS(on)}	V _{GS} =10V, I _D =3A		80	100	mΩ
		V _{GS} =4.5V, I _D =2A		90	120	
Dynamic Characteristics ⁽⁴⁾						
Input capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f=1MHz		330		pF
Output capacitance	C _{oss}			90		
Reverse transfer capacitance	C _{rss}			17		
Switching Characteristics ⁽⁴⁾						
Total Gate Charge	Q _g	V _{DS} =30V, V _{GS} =4.5V, I _D =3A		5.1		pF
Gate-Source Charge	Q _{gs}			1.3		
Gate-Drain Charge	Q _{gd}			1.7		
Turn-on Delay Time	T _{d(on)}	V _{GS} =10V, V _{DD} =30V ,I _D =1.5A, R _G =1Ω, R _{Gen} =3Ω		13		nS
Turn-on Rise Time	T _r			51		
Turn-Off Delay Time	T _{d(off)}			19		
Turn-Off Fall Time	t _f			12		
Drain-Source Diode Characteristics ⁽⁴⁾						
Body Diode Voltage	V _{SD}	V _{GS} =0V ,I _S =3A			1.2	V

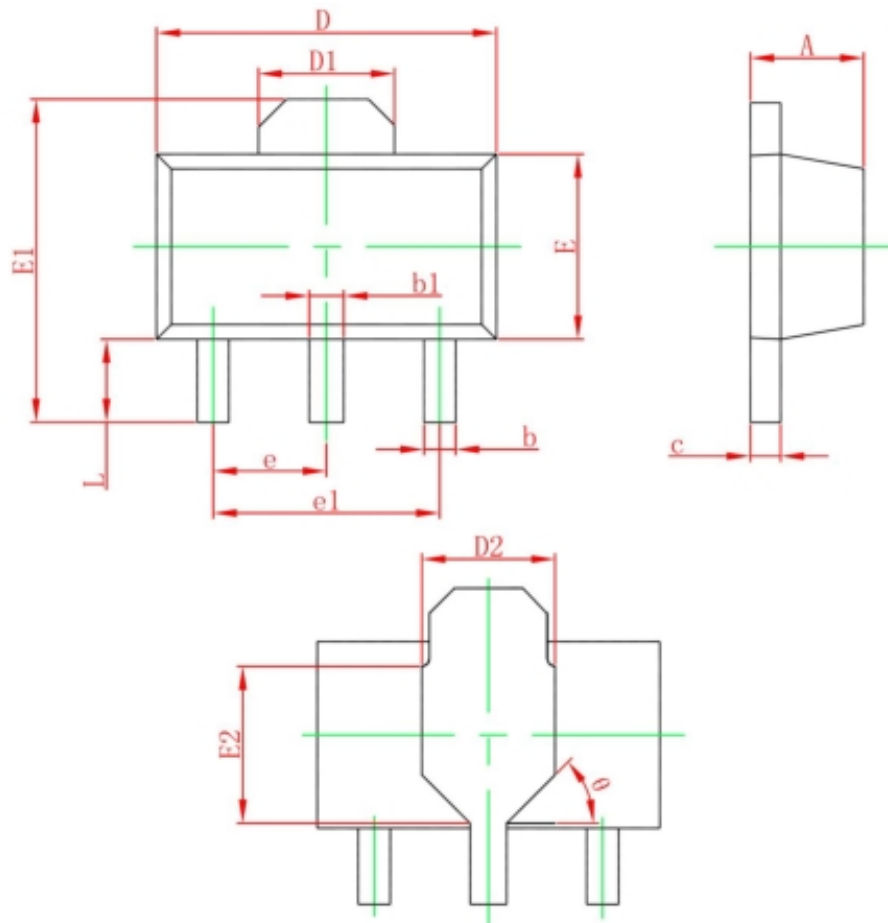
Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production

Typical Characteristics



SOT-89-3L Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.400	1.600
b	0.320	0.520
b1	0.400	0.580
c	0.350	0.440
D	4.400	4.600
D1	1.550 REF.	
D2	1.750 REF.	
E	2.300	2.600
E1	3.940	4.250
E2	1.900 REF.	
e	1.500 TYP.	
e1	3.000 TYP.	
L	0.900	1.200
θ	45°	