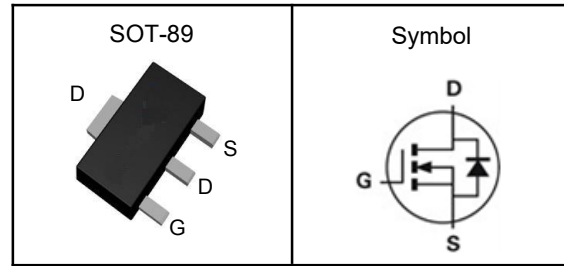


N-Channel Enhancement Mode MOSFET
: YUi fYg

- Low Rdson for low conduction loss
- Reliable and Rugged
- ROHS Compliant & Halogen-Free

D]b 8 YgW]dljcb

Applications

- Power Management in Desktop Computer
- DC/DC Converters

V_{DSS}	100	V
$R_{DS(ON)-Typ}$	80	m Ω
I_D	15	A

Absolute Maximum Ratings($T_J=25^\circ\text{C}$, Unless Otherwise Noted)

Symbol	Parameter	Rating	Unit
V_{DSS}	Drain-Source Voltage	100	V
V_{GSS}	Gate-Source Voltage	± 20	V
T_J	Maximum Junction Temperature	-55 to 150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
E_{AS}	Single Pulse Avalanche Energy ³	12	mJ
$I_{DM}^{①}$	Pulse Drain Current Tested	26	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$	W

Thermal Characteristics

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	35	$^\circ\text{C/W}$

Note ① : Max. current is limited by bonding wire.

Note ② : UIS tested and pulse width are limited by maximum junction temperature 150 $^\circ\text{C}$.

Note ③ : Surface Mounted on 1in² FR-4 board with 1oz.



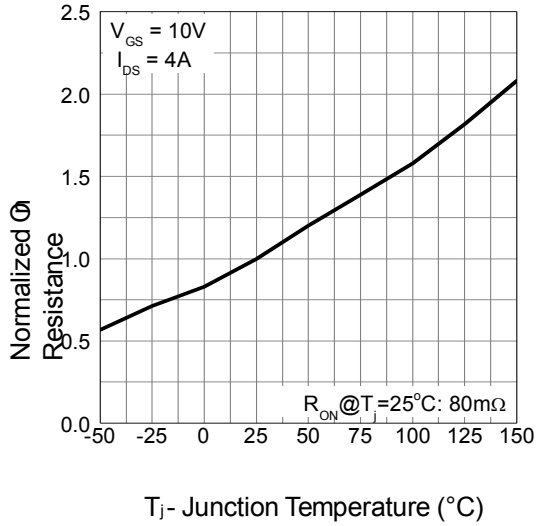
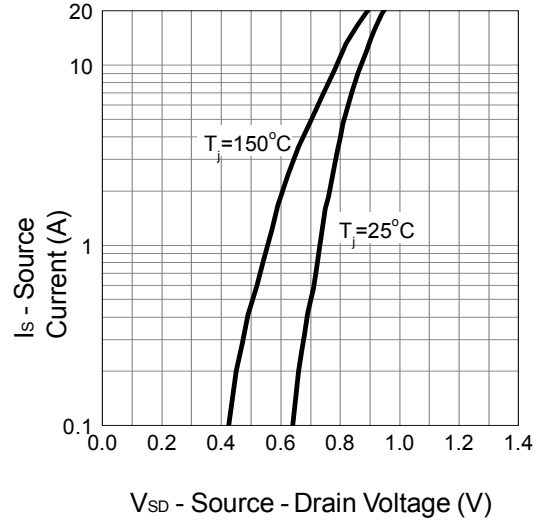
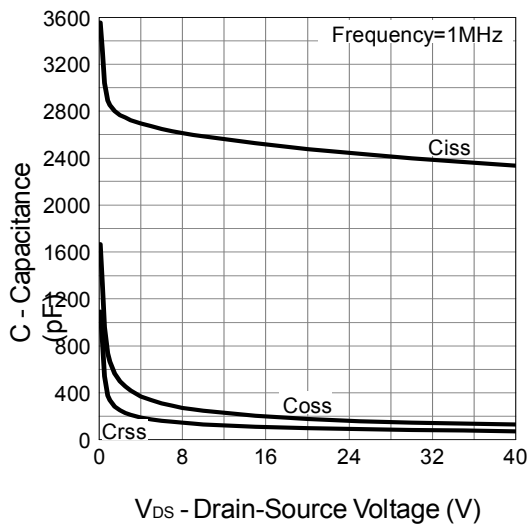
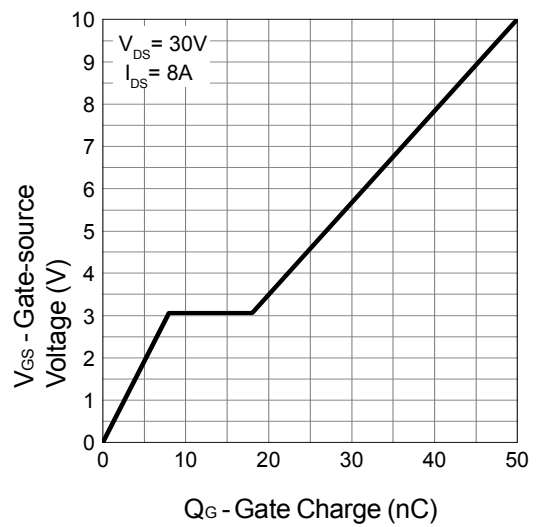
N-Channel Enhancement Mode MOSFET

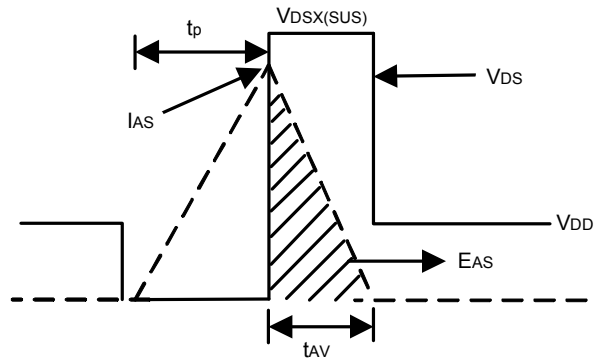
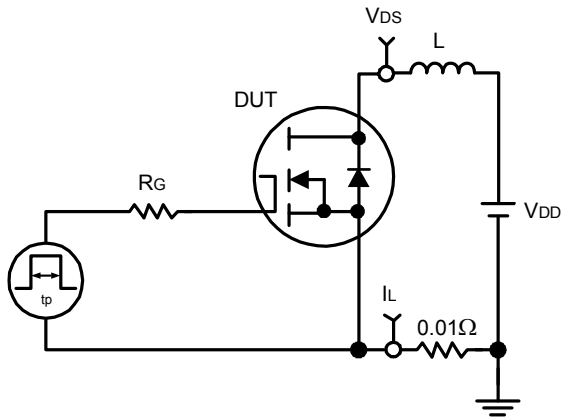
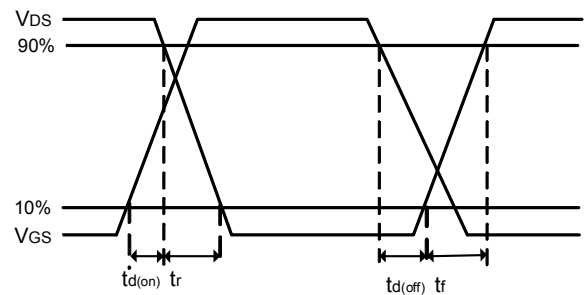
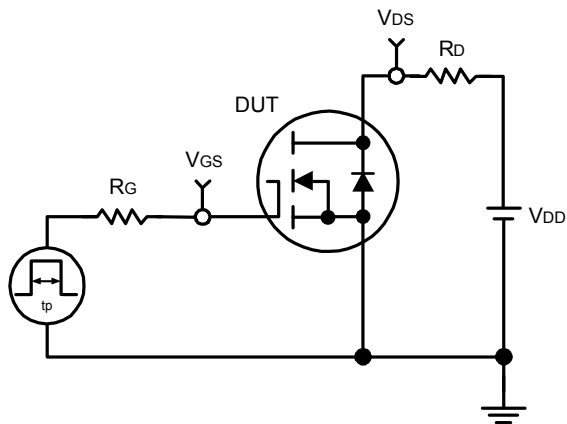
Electrical Characteristics (T_J=25°C, Unless Otherwise Noted)

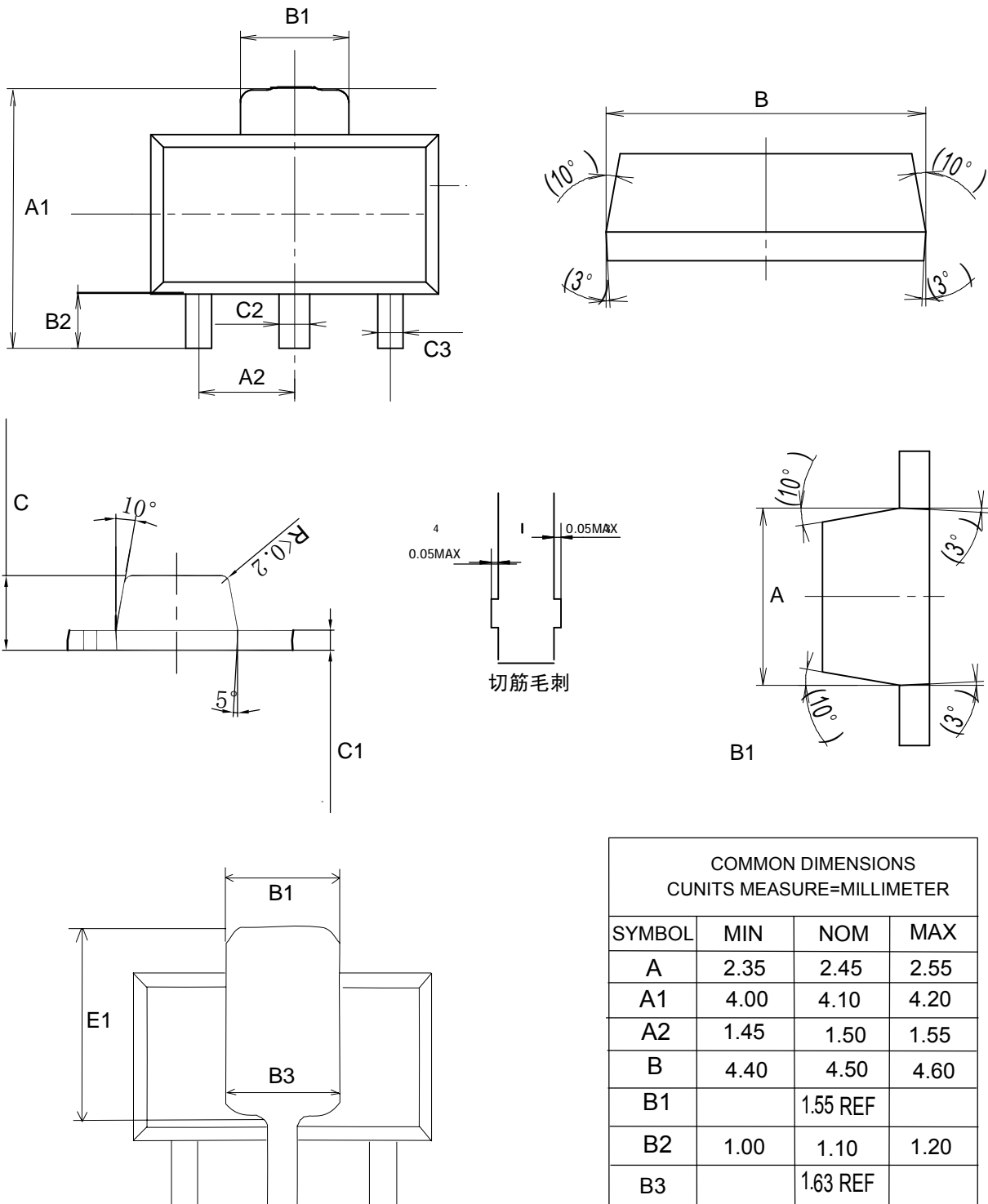
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Static Electrical Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	100	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =80V, V _{GS} =0V	---	---	1	uA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1	---	3	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
R _{DS(ON)}	Drain-Source On-state Resistance	V _{GS} =10V, I _D =4A	---	80	100	mΩ
		V _{GS} =4.5V, I _D =3.5A	---	85	110	mΩ
Dynamic Characteristics ^⑤						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =30V, Freq.=1MHz	---	740	---	pF
C _{oss}	Output Capacitance		---	45	---	
C _{rss}	Reverse Transfer Capacitance		---	24	---	
T _{d(on)}	Turn-on Delay Time	V _{GEN} =10V, V _{DD} =30V R _G =6Ω, I _D =1A, R _L =30Ω	---	11	---	nS
T _r	Turn-on Rise Time		---	6	---	
T _{d(off)}	Turn-off Delay Time		---	27	---	
T _f	Turn-off Fall Time		---	5	---	
R _g	Gate Resistance	f = 1.0MHz, open drain	---	2.5	---	Ω
Q _g	Total Gate Charge	V _{DS} =30V, V _{GS} =10V, I _D =4A	---	16	---	nC
Q _{gs}	Gate-Source Charge		---	2.5	---	
Q _{gd}	Gate-Drain Charge		---	3	---	
Source-Drain Characteristics (T _J =25°C)						
V _{SD} ^④	Diode Forward Voltage	I _S =3A, V _{GS} =0V	---	0.8	1.3	V
t _{rr}	Reverse Recovery Time	I _{SD} =3A, di/dt=100Aμs, T _J =25°C	---	27	---	nS
Q _{rr}	Reverse Recovery Charge		---	36	---	nC

Note ④ : Pulse test (pulse width≤300us, duty cycle≤2%).

Note ⑤ : Guaranteed by design, not subject to production testing.

N-Channel Enhancement Mode MOSFET
Typical Characteristics
Drain-Source On Resistance

Source-Drain Diode Forward

Capacitance

Gate Charge


N-Channel Enhancement Mode MOSFET
Avalanche Test Circuit and Waveforms

Switching Time Test Circuit and Waveforms


N-Channel Enhancement Mode MOSFET
SOT-89 Package Outline Data


COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER			
SYMBOL	MIN	NOM	MAX
A	2.35	2.45	2.55
A1	4.00	4.10	4.20
A2	1.45	1.50	1.55
B	4.40	4.50	4.60
B1		1.55 REF	
B2	1.00	1.10	1.20
B3		1.63 REF	
C	1.45	1.50	1.55
C1	0.39	0.40	0.41
C2	0.4	0.48	0.55
C3	0.35	0.4	0.45
E1	2.65	2.75	2.85