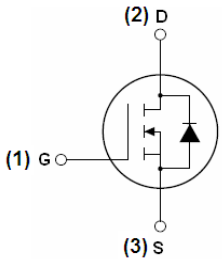
Features

V_{DSS}	$R_{DS(ON)}$ @10V (Typ)	I_D
80V	7mΩ	88A

- Avalanche Rated
- Reliable and Rugged
- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- RoHS Compliant

Applications

- Synchronous Rectification
- Power Management in Inverter System

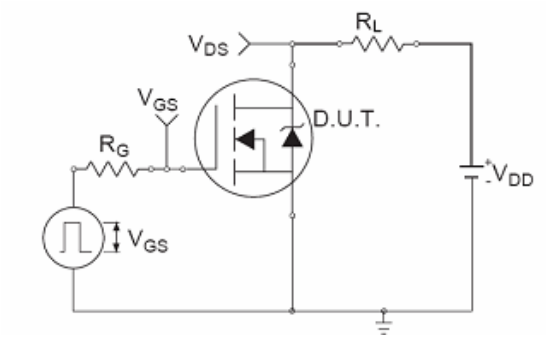


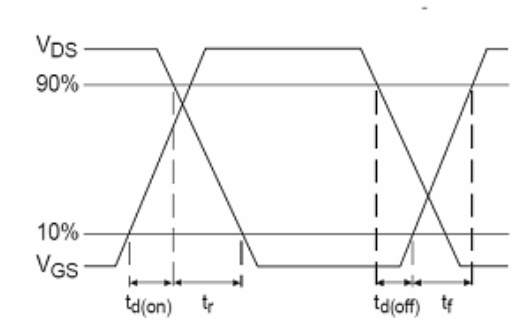
Schematic diagram

Ordering Information

Part Number	Marking	Case	Packaging
8070	8070	TO-252	2500pcs/Tube
8070	8070	TO-220	50pcs/Tube

Switching Time Test Circuit and Waveforms





Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		80	V
V_{GSS}	Gate –Source Voltage		±25	V
I_D	Continuous Drain Current	T_C=100°C	50	A
		T_C=25°C	88	A
I_{DP}	300us Pulsed Drain Current Tested		280	A
I_S	Diode Continuous Forward Current		70	A
E_{AS}	Single PulseAvalanche Energy		550	mJ
T_J	Operating Junction Temperature		175	°C
T_{STG}	Storage Temperature Range		-55 ~ 175	°C

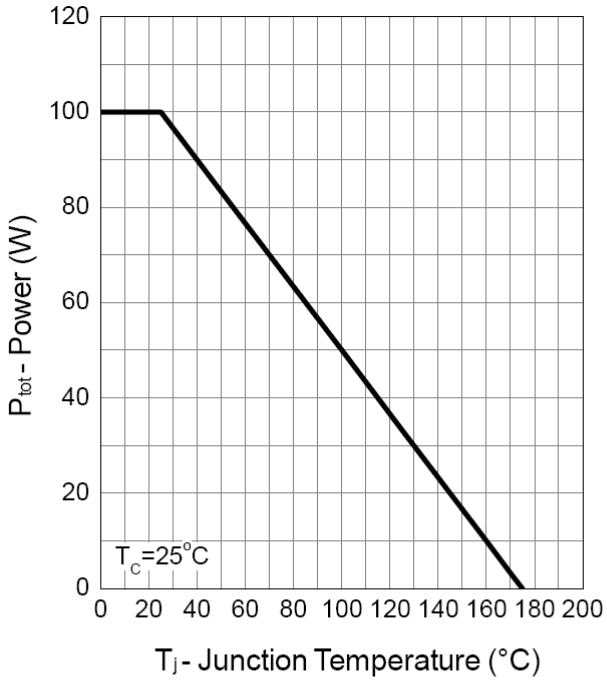
Electrical Characteristics (TA=25°C Unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ	Max.	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=250uA	80			V
$\Delta BV_{DSS}/\Delta T_J$	Breakdown Voltage Temp. Coe			0.073		
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-24V,V_{GS}=0V			1	uA
		T_J=85°C			30	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250uA	2	3	4	V
I_{GSS}	Gate Leakage Current	V_{GS}=±25V, V_{DS}=0V			±100	nA
$R_{DS(on)}$[1]	Drain-Source On-Resistance	V_{GS}=10V, I_D=40A		7	8.2	mΩ
Diode Characteristics						
V_{SD}[1]	Diode Forward Voltage	I_{SD}=20A,V_{GS}=0V		0.8	1.3	V
t_{rr}	Reverse Recovery Time	I_{SD}=40A,		50		ns
Q_{rr}	Reverse Recovery Charge	dI_{SD}/dt=100A/us		90		nC
Dynamic Characteristics[2]						
R_G	Gate Resistance	V_{GS}=0V, V_{DS}=0V, Frequency=1MHz		1.3		Ω
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=30V Frequency=1MHz		3000	4200	pF
C_{oss}	Output Capacitance			350		
C_{rss}	Reverse Transfer Capacitance			250		
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=30V,R_L=30Ω I_D=1A,V_{GEN}=10V R_G=6Ω		22	40	ns
t_r	Turn-On Rise Time			14	25	
$t_{d(off)}$	Turn-Off Delay Time			58	104	
t_f	Turn-Off Fall Time			25	45	
Gate Charge Characteristics[2]						
Q_g	Total Gate Charge	V_{DS}=40V,V_{GS}=10V I_D=40A		77	108	nC
Q_{gs}	Gate-Source Charge			22		
Q_{gd}	Gate-Drain Charge			23		

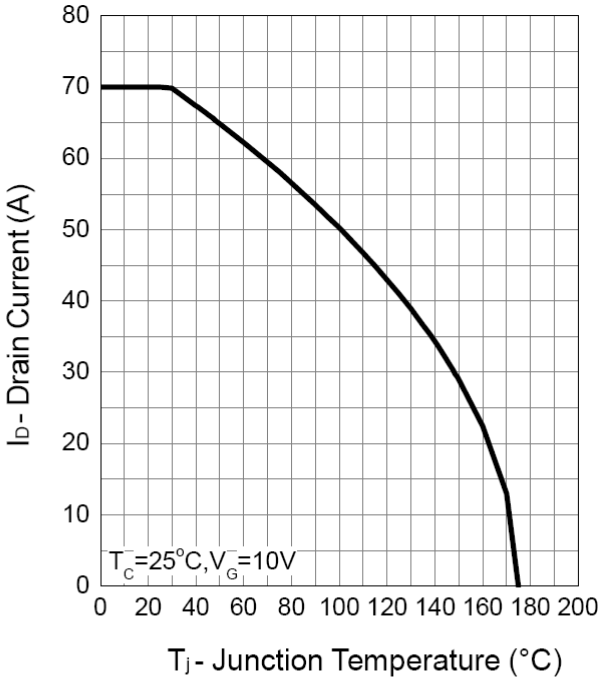
Note: 1: Pulse test ; pulse width ≦ 300ns, duty cycle ≦ 2%.
2: Guaranteed by design, not subject to production testing.

Typical Characteristics

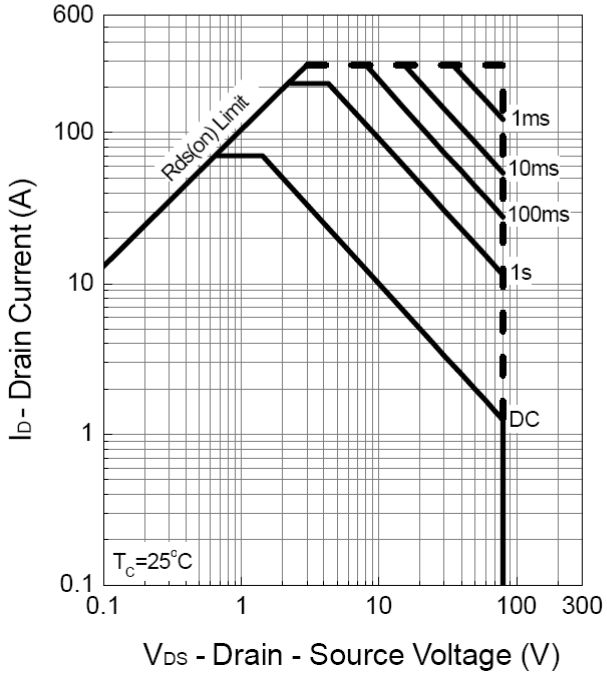
Power Dissipation



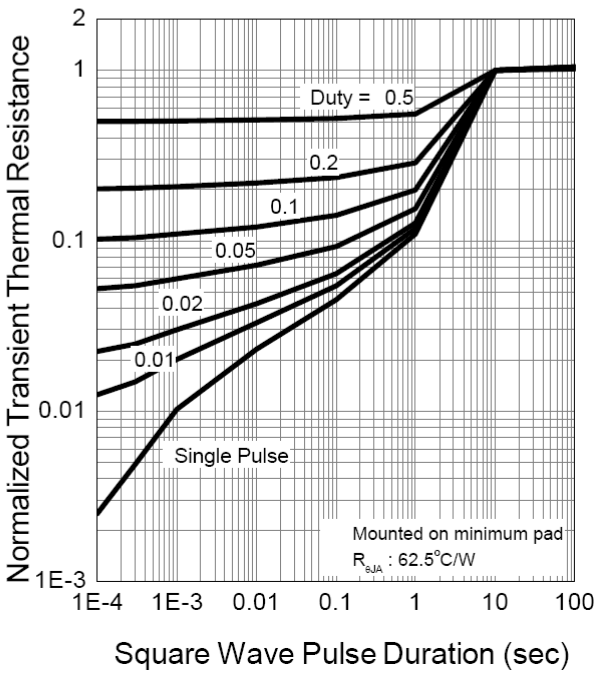
Drain Current



Safe Operation Area

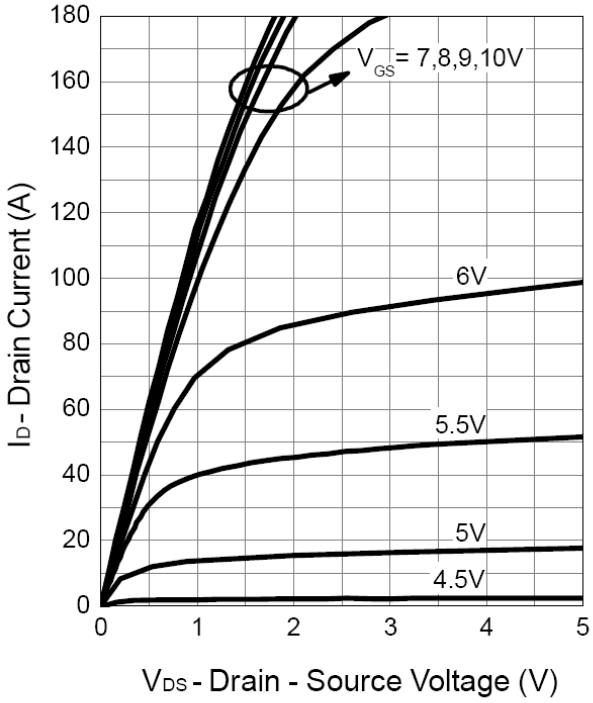


Thermal Transient Impedance

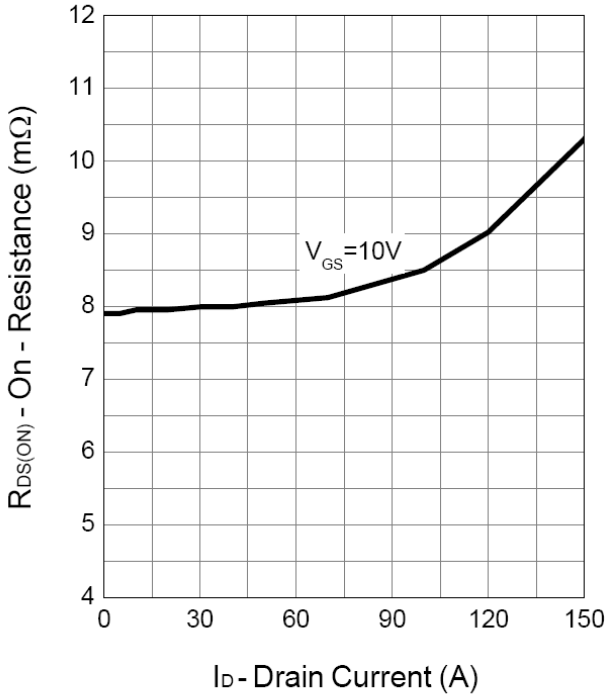


Typical Characteristics (Cont.)

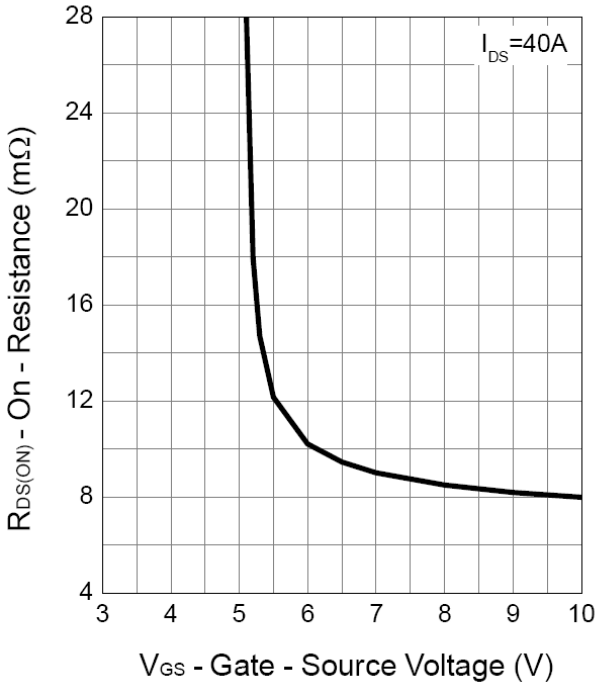
Output Characteristics



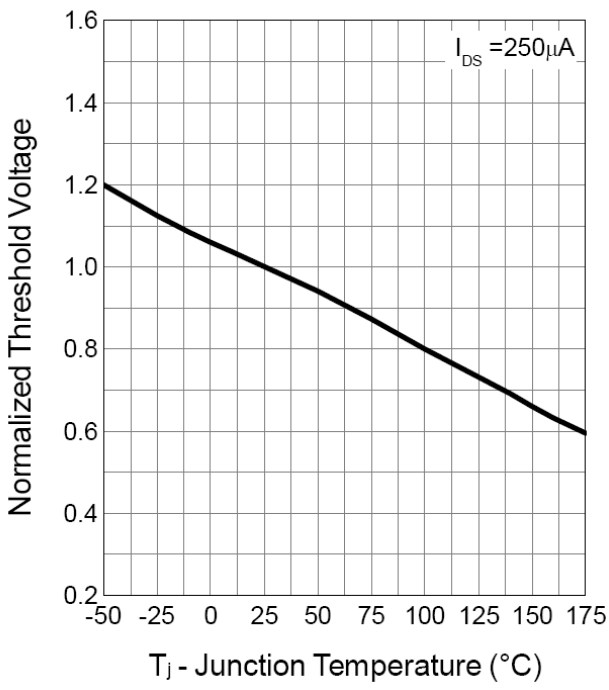
Drain-Source On Resistance



Gate-Source On Resistance

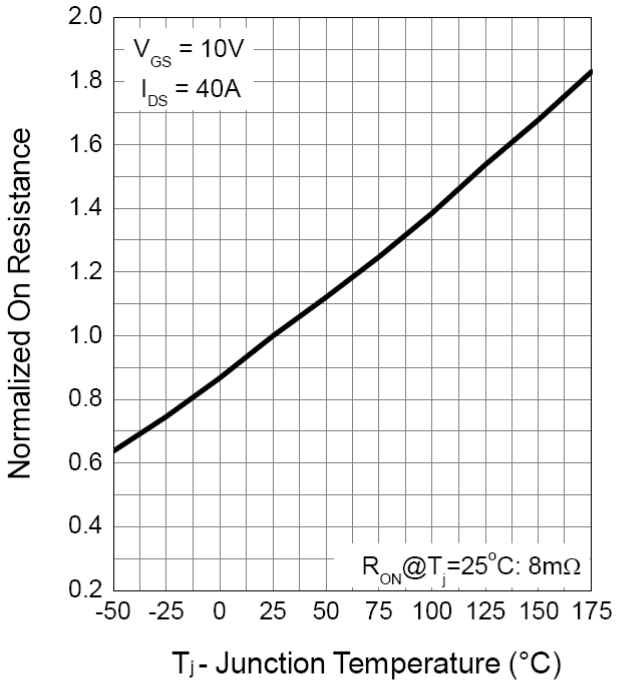


Gate Threshold Voltage

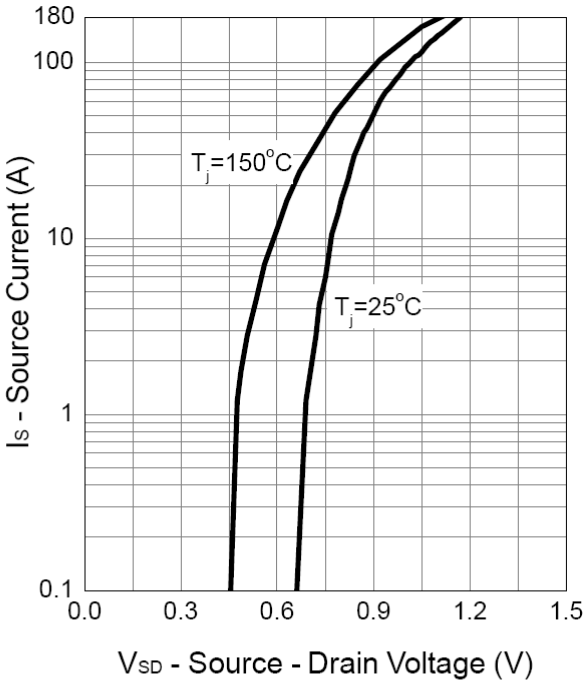


Typical Characteristics (Cont.)

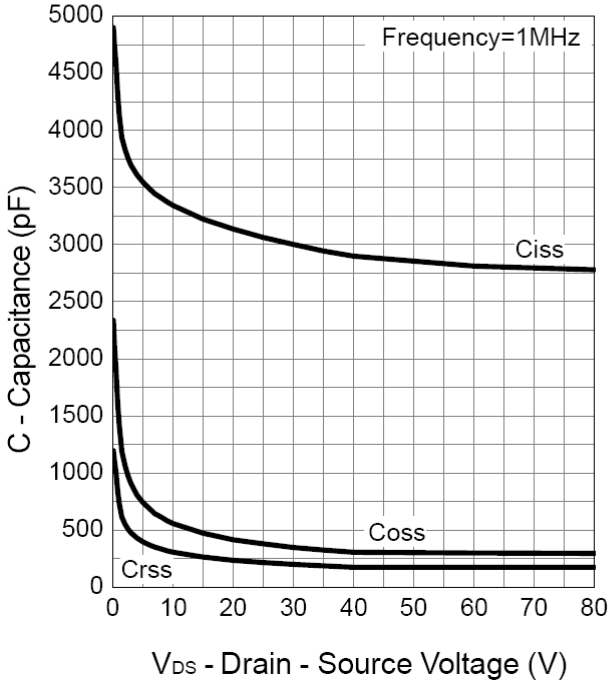
Drain-Source On Resistance



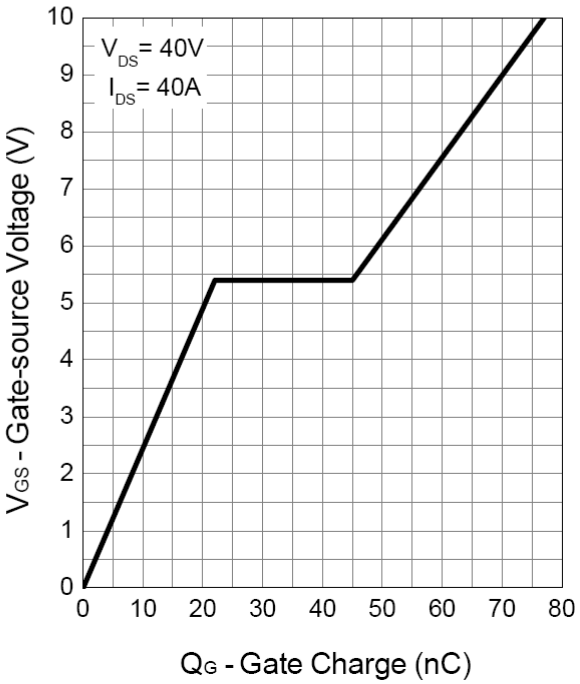
Source-Drain Diode Forward



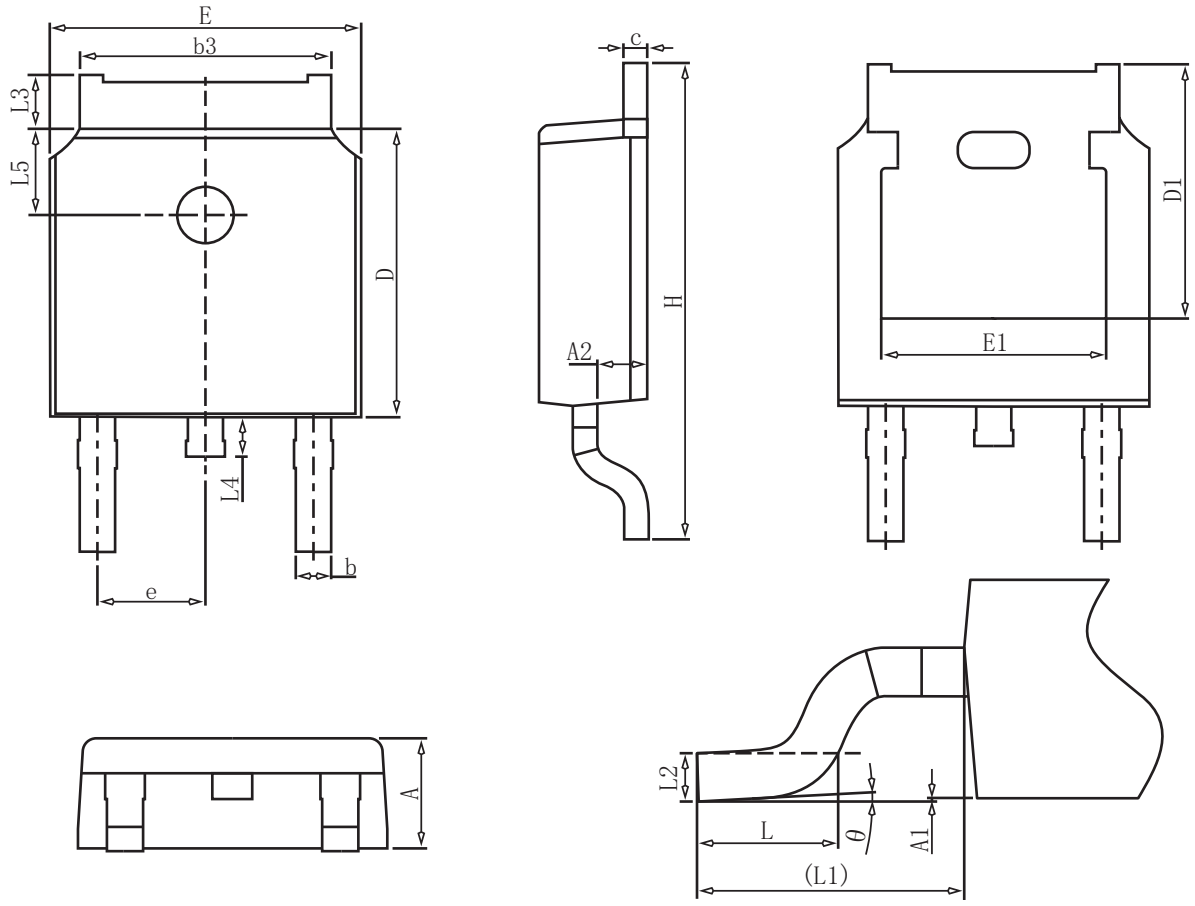
Capacitance



Gate Charge



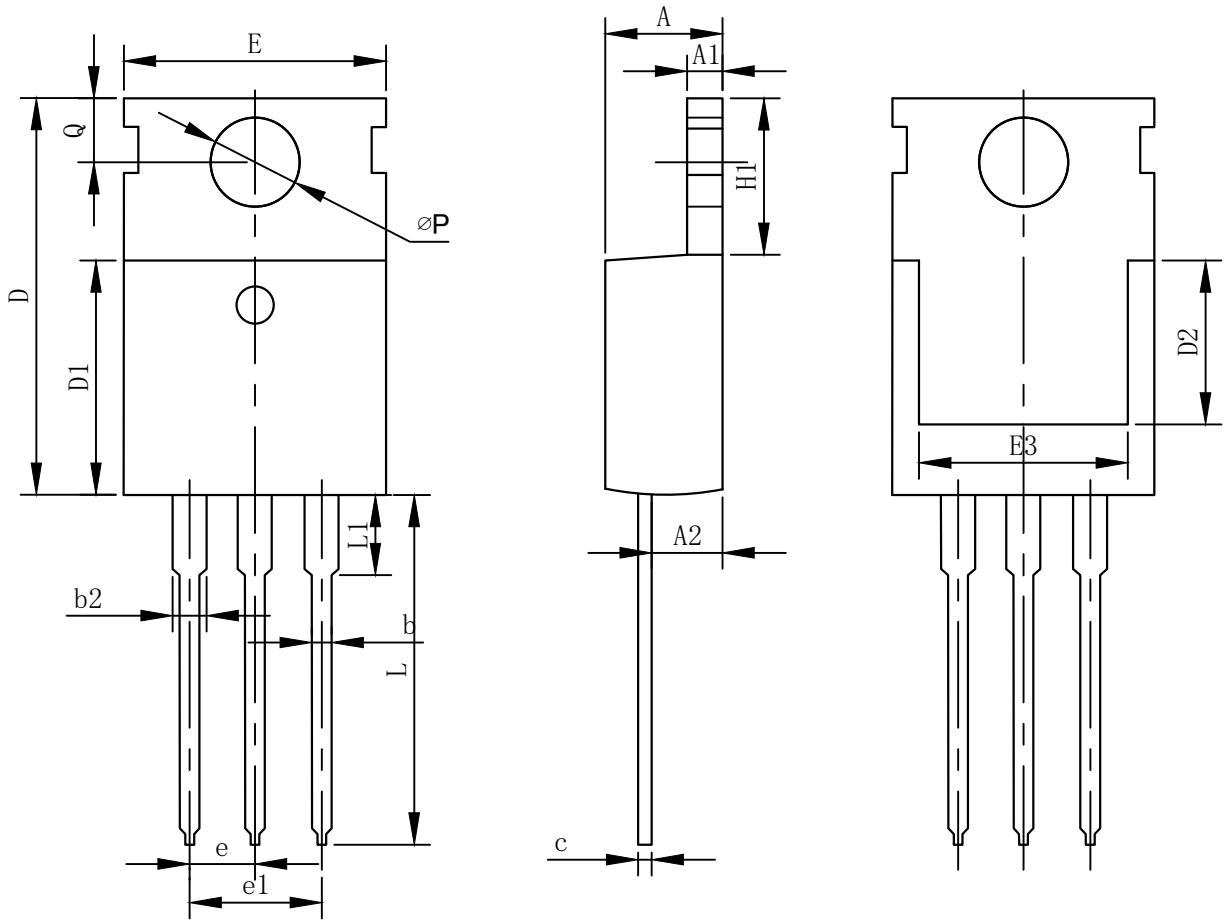
TO-252 Package information



COMMON DIMENSIONS

SYMBOL	mm		
	MIN	NOM	MAX
A	2.20	2.30	2.40
A1	0.00	–	0.20
A2	0.97	1.07	1.17
b	0.68	0.78	0.90
b3	5.20	5.33	5.50
c	0.43	0.53	0.63
D	5.98	6.10	6.22
D1	5.30REF		
E	6.40	6.60	6.80
E1	4.63	–	–
e	2.286BSC		
H	9.40	10.10	10.50
L	1.38	1.50	1.75
L1	2.90REF		
L2	0.51BSC		
L3	0.88	–	1.28
L4	0.50	–	1.00
L5	1.65	1.80	1.95
θ	0°	–	8°

TO-220 Package information



COMMONDIMENSIONS

SYMBO	mm		
	MIN	NOM	MAX
A	4.37	4.57	4.70
A1	1.25	1.30	1.40
A2	2.20	2.40	2.60
b	0.70	0.80	0.95
b2	1.70	1.27	1.47
c	0.45	0.50	0.60
D	15.10	15.60	16.10
D1	8.80	9.10	9.40
D2	5.50	-	-
E	9.70	10.00	10.30
E3	7.00	-	-
e	2.54BSC		
e1	5.08BSC		
H1	6.25	6.50	6.85
L	12.75	13.50	13.80
L1	-	3.10	3.40
⌀P	3.40	3.60	3.80
Q	2.60	2.80	3.00