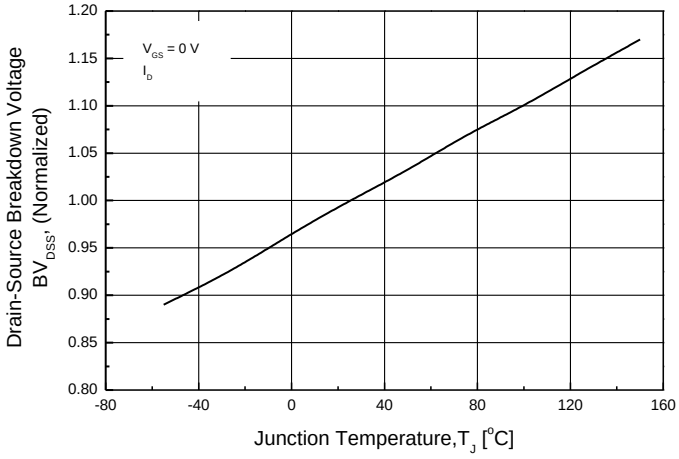
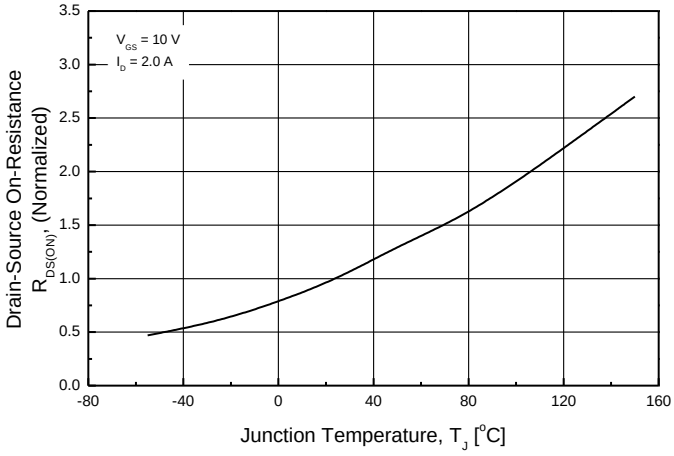
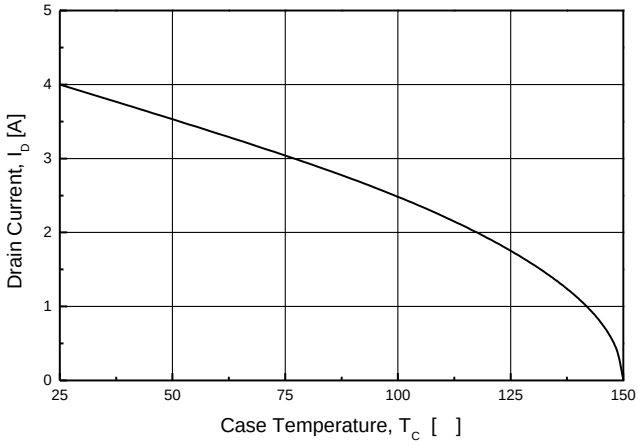
Electrical Characteristics : T_C=25 , unless otherwise noted

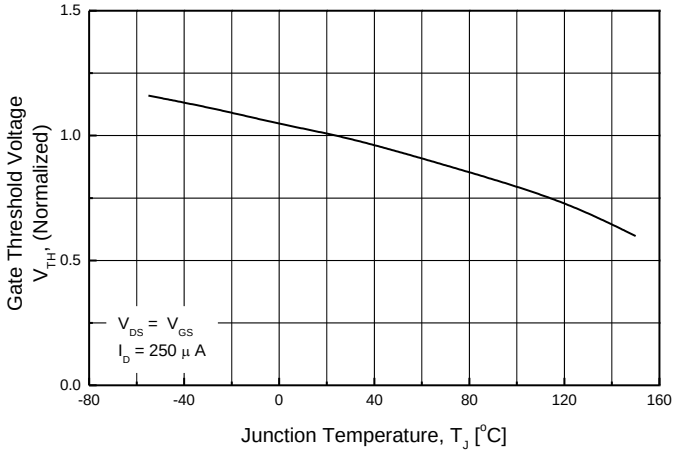
Parameter	Symbol	Test condition	Min	Typ	Max	Units
OFF						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0 V, I_D = 250 µA	650	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 650 V, V_{GS} = 0 V	--	--	1	µA
		V_{DS} = 520 V, T_C = 125°C	--	--	10	µA
Forward Gate-Source Leakage Current	I_{GSSF}	V_{GS} = 30 V, V_{DS} = 0 V	--	--	100	µA
Reverse Gate-Source Leakage Current	I_{GSSR}	V_{GS} = -30 V, V_{DS} = 0 V	--	--	-100	µA
ON						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 µA	2	--	4	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10 V, I_D = 2.0 A	--	2.0	2.4	Ω
Forward Transconductance (Note 4)	g_{FS}	V_{DS} = 30 V, I_D = 2.0 A	--	6.2	--	S
DYNAMIC						
Input Capacitance	C_{iss}	V_{DS} = 25 V, V_{GS} = 0 V, f = 1.0 MHz	--	745	--	pF
Output Capacitance	C_{oss}		--	67	--	pF
Reverse Transfer Capacitance	C_{rss}		--	8.9	--	pF
SWITCHING						
Turn-On Delay Time (Note 4,5)	$t_{d(on)}$	V_{DD} = 325 V, I_D = 4.0 A, R_G = 25	--	14	--	ns
Turn-On Rise Time (Note 4,5)	t_r		--	22	--	ns
Turn-Off Delay Time (Note 4,5)	$t_{d(off)}$		--	72	--	ns
Turn-Off Fall Time (Note 4,5)	t_f		--	19	--	ns
Total Gate Charge (Note 4,5)	Q_g	V_{DS} = 520V, I_D = 4.0 A, V_{GS} = 10 V	--	16	--	nC
Gate-Source Charge (Note 4,5)	Q_{gs}		--	2.5	--	nC
Gate-Drain Charge (Note 4,5)	Q_{gd}		--	6	--	nC
SOURCE DRAIN DIODE						
Maximum Continuous Drain-Source Diode Forward Current	I_S	----	--	--	4	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}	----	--	--	16	A
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS} = 0 V, I_S = 4.0 A	--	--	1.5	V
Reverse Recovery Time (Note 4)	t_{rr}	V_{GS} = 0 V, I_S = 4.0 A, dI_F / dt = 100 A/µs	--	326	--	ns
Reverse Recovery Charge (Note 4)	Q_{rr}		--	1.8	--	µC

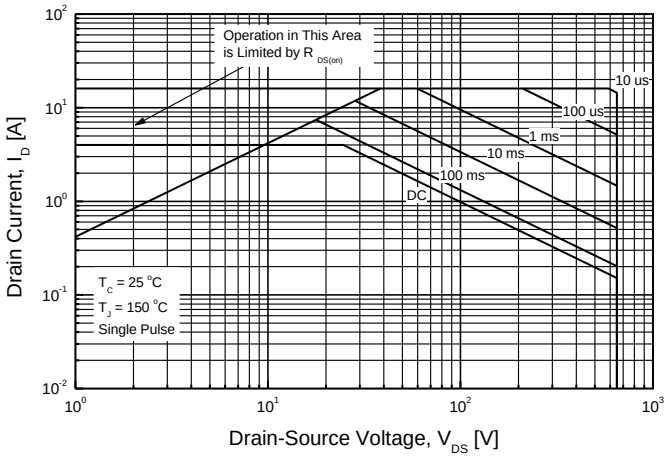
Note :
1. Repeated rating : Pulse width limited by safe operating area
2. L=28mH, I_{AS} = 4A, V_{DD} = 50V, R_G = 25 , Starting T_J= 25
3 I_{SD} 4A, di/dt µs , V_{DD} $_{DS}$, Starting T_J= 25
µ
5. Essentially Independent of Operating Temperature Typical Characteristics

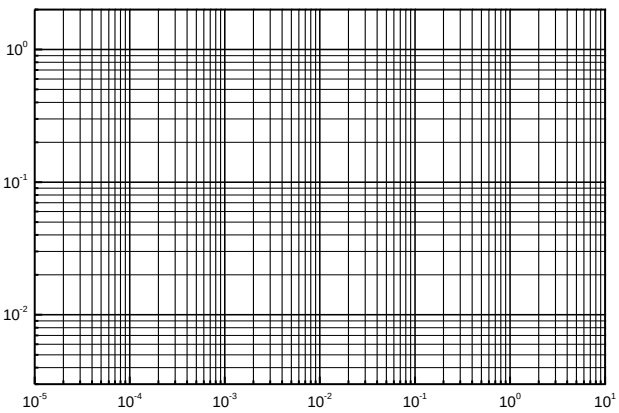

Drain-Source Breakdown Voltage
BV_DSS, (Normalized)
V_GS = 0 V
I_D
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
-80
-40
0
40
80
120
160
Junction Temperature,T_J [°C]


Drain-Source On-Resistance
R_DS(ON), (Normalized)
V_GS = 10 V
I_D = 2.0 A
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-80
-40
0
40
80
120
160
Junction Temperature, T_J [°C]

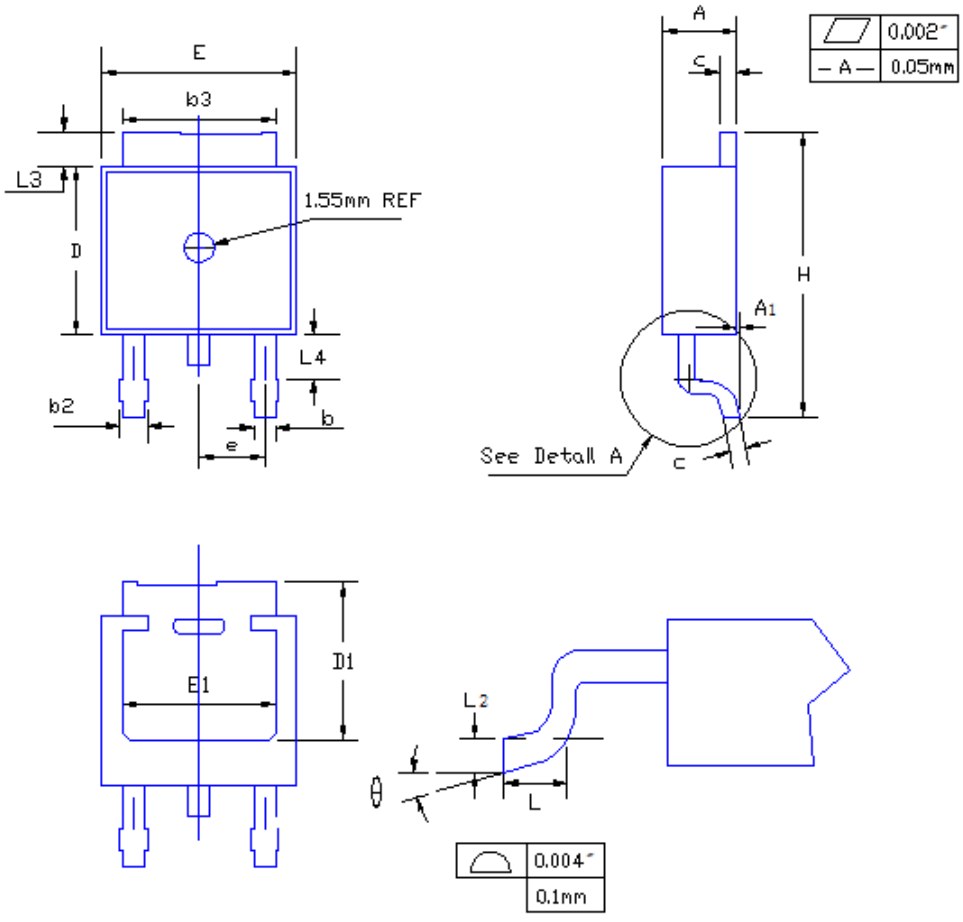

Drain Current, I_D [A]
5
4
3
2
1
0
25
50
75
100
125
150
Case Temperature, T_C [ ]


Gate Threshold Voltage
V_TH, (Normalized)
1.5
1.0
0.5
0.0
V_DS = V_GS
I_D = 250 μ A
-80
-40
0
40
80
120
160
Junction Temperature, T_J [°C]


Drain Current, I_D [A]
Operation in This Area
is Limited by R DS(on)
10 us
100 us
1 ms
10 ms
100 ms
DC
T_C = 25 °C
T_J = 150 °C
Single Pulse
10^2
10^1
10^0
10^-1
10^-2
10^0
10^1
10^2
10^3
Drain-Source Voltage, V_DS [V]


10^0
10^-1
10^-2
10^-5
10^-4
10^-3
10^-2
10^-1
10^0
10^1

TO-252 (D-PAK) MECHANICAL DATA



SYMBOL	MILLIMETERS	
	MIN	MAX
A	2.19	2.38
A1	–	0.13
b	0.64	0.89
b2	0.84	1.14
b3	5.21	5.46
c	0.46	0.61
D	5.97	6.22
D1	5.21	—
E	6.35	6.73
E1	4.83	—
e	2.29BSC	
H	9.65	10.41
L	1.40	1.78
L2	0.51BSC	
L3	0.89	1.27
L4	0.64	1.01
θ	0	8