

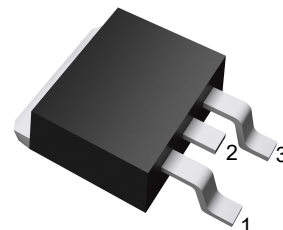
PJM150N80TC

N-Channel Enhancement Mode Power MOSFET

Features

- Low on-resistance $R_{DS(on)}$
- $V_{DS} = 80V, I_D = 150A$
 $R_{DS(on)} < 5.5m\Omega @ V_{GS} = 10V$

TO-263

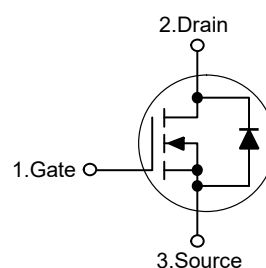


1. Gate 2.Drain 3.Source

Applications

- Motor control and drive
- Battery management

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	80	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	150	A
Drain Current-Pulsed ^{Note1}	I_{DM}	500	A
Single pulse avalanche energy ^{Note4}	E_{AS}	1100	mJ
Maximum Power Dissipation	P_D	220	W
Junction Temperature	T_J	175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

Thermal Characteristics

Maximum Junction-to-Case ^{Note2}	$R_{\theta JC}$	0.68	°C/W
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Electrical Characteristics

(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	80	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=80V, V_{GS}=0V$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	± 1	μA
Gate Threshold Voltage ^{Note3}	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	3	4	V
Drain-Source On-Resistance ^{Note3}	$R_{DS(on)}$	$V_{GS}=10V, I_D=40A$	--	5	5.5	m Ω
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=10V, I_D=60A$	20	--	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=40V, V_{GS}=0V, f=1MHz$	--	6500	--	pF
Output Capacitance	C_{oss}		--	800	--	pF
Reverse Transfer Capacitance	C_{rss}		--	310	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=40V, I_D=80A$ $V_{GS}=10V, R_{GEN}=3\Omega$	--	28	--	nS
Turn-on Rise Time	t_r		--	66	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	145	--	nS
Turn-off Fall Time	t_f		--	53	--	nS
Total Gate Charge	Q_g	$V_{DD}=40V, I_D=80A, V_{GS}=10V$	--	100	--	nC
Gate-Source Charge	Q_{gs}		--	20	--	nC
Gate-Drain Charge	Q_{gd}		--	35	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	V_{SD}	$V_{GS}=0V, I_S=150A$	--	--	1.4	V
Diode Forward Current ^{Note2}	I_S		--	--	150	A

Note: 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 $\leq 2\%$

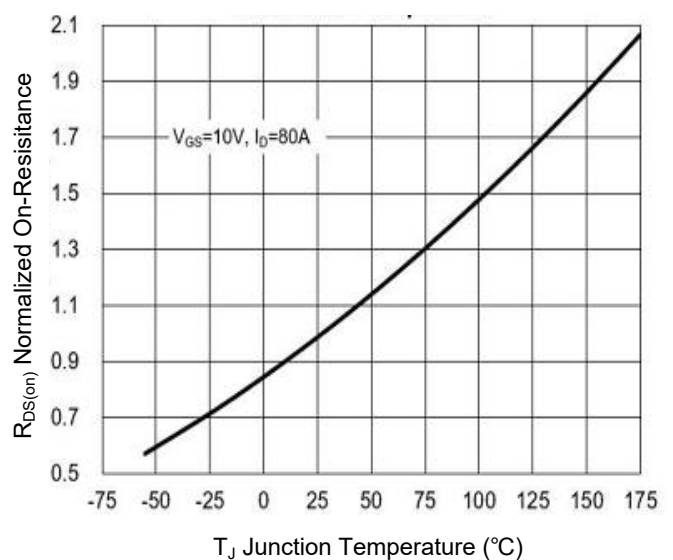
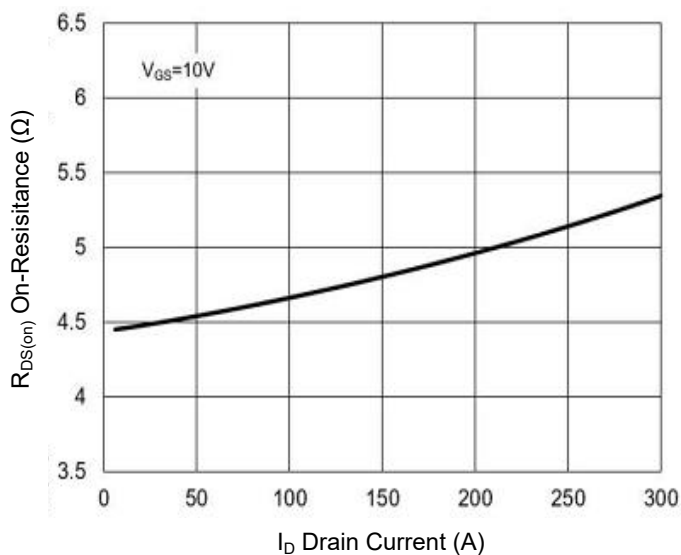
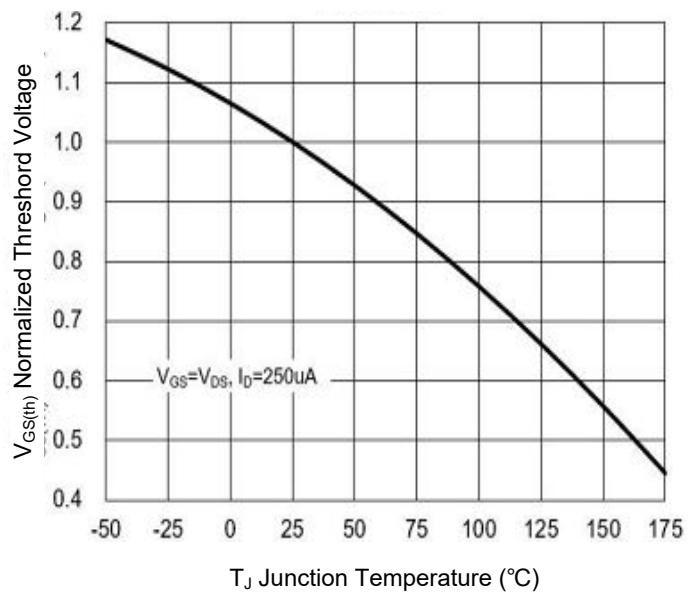
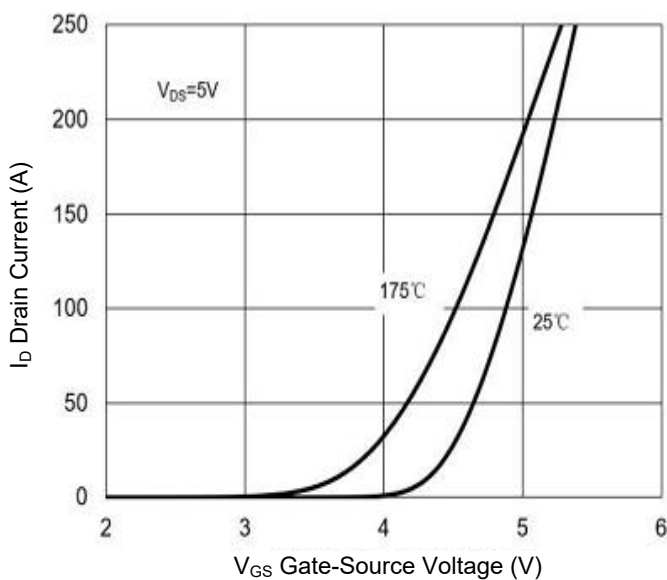
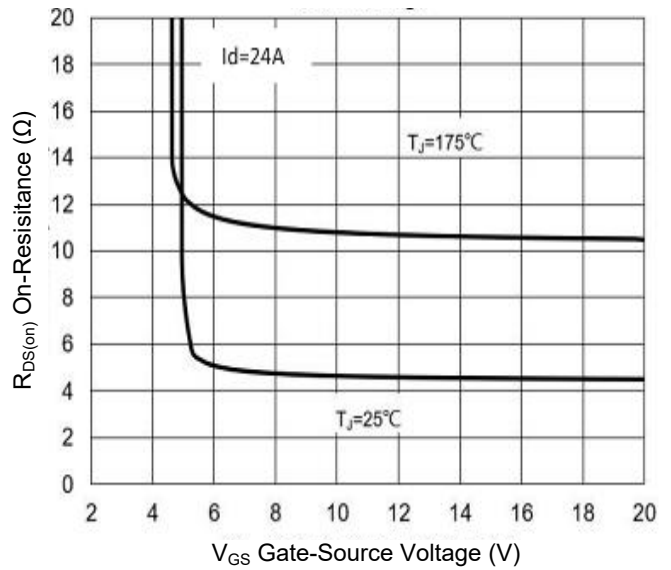
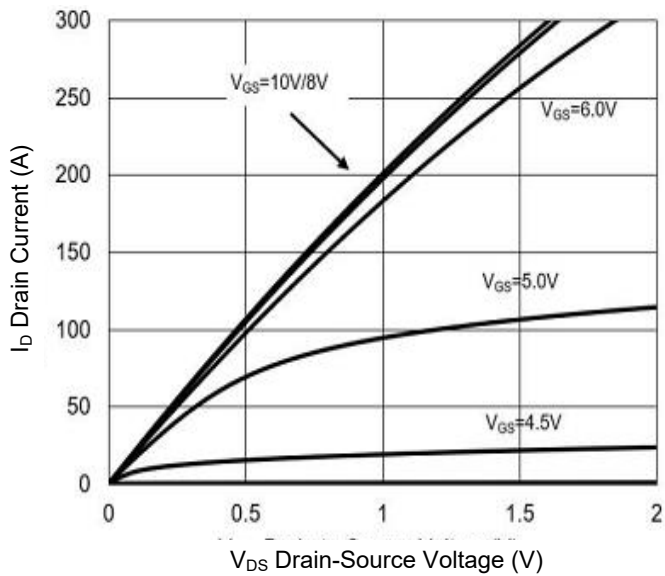
4. E_{AS} is tested at starting $T_j=25^\circ C, V_{DD}=50V, V_{GS}=10V, L=0.25mH, R_g=25\Omega, I_{AS}=65A$

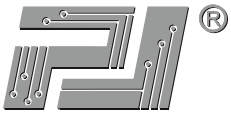


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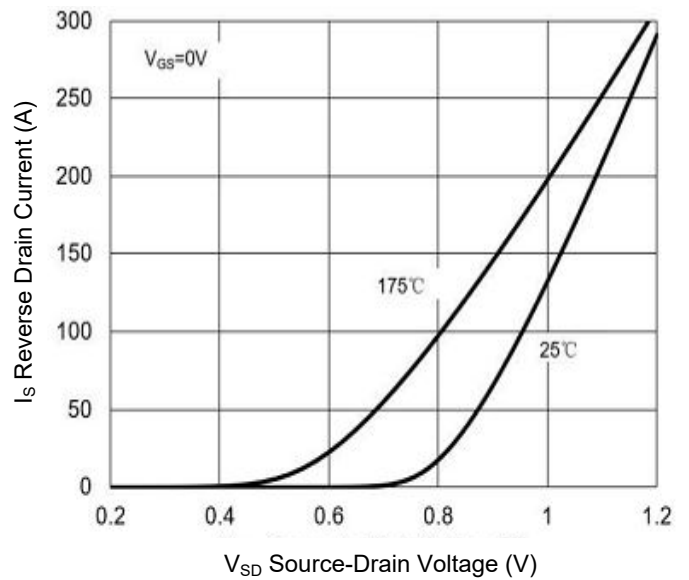
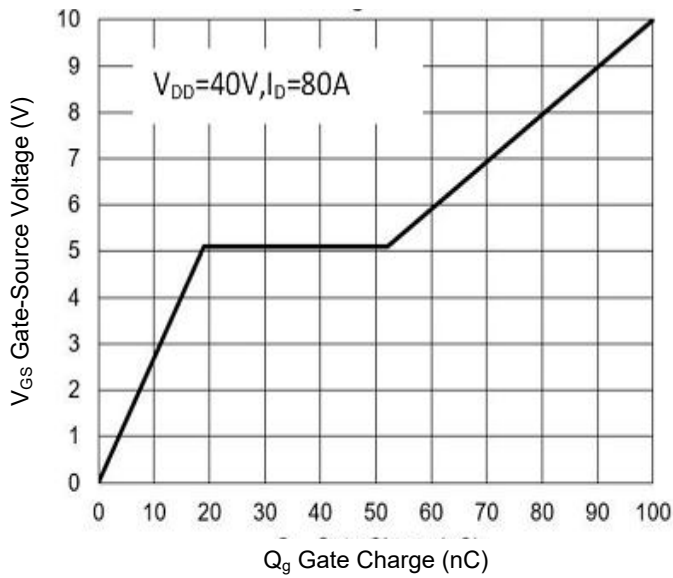
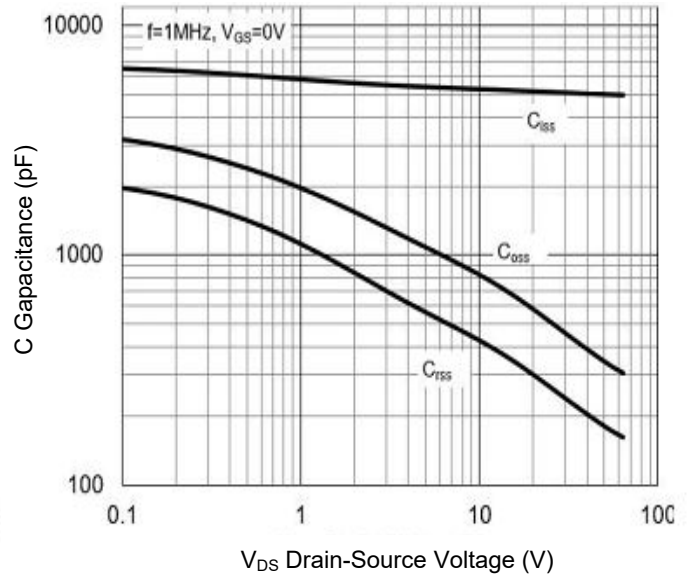
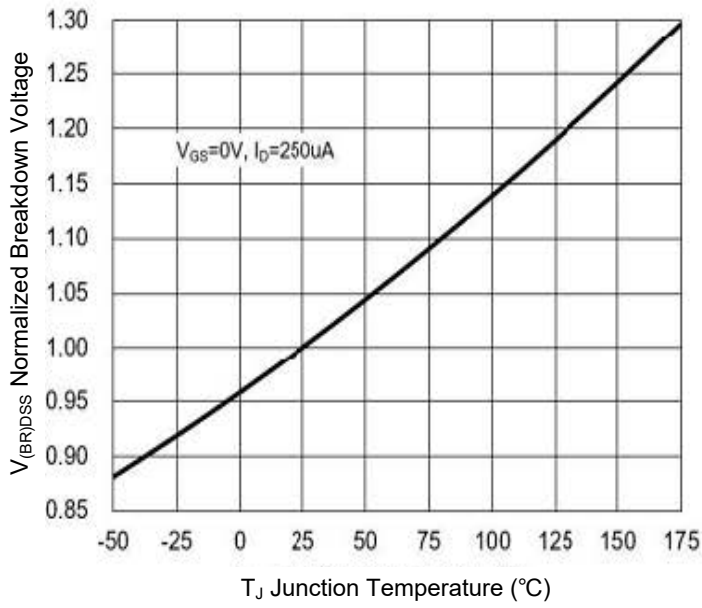
Typical Characteristic Curves





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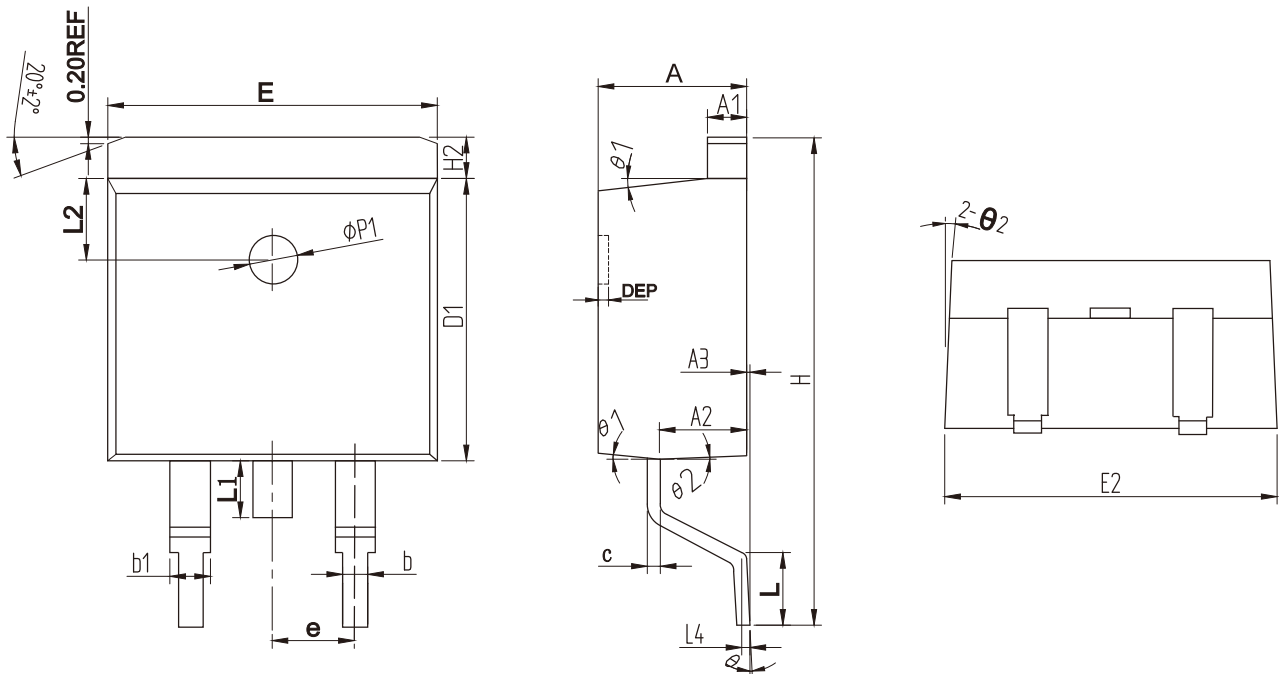
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Package Outline

TO-263

Dimensions in mm



SYMBOL	MM		
	Min.	Nom.	Max.
A	4.40	4.57	4.70
A1	1.22	1.27	1.32
A2	2.59	2.69	2.79
A3	0.00		0.10
b	0.77	0.813	0.90
b1	1.20	1.270	1.36
c	0.34	0.381	0.47
D1	8.75	8.90	9.05
E	10.00	10.16	10.26
E2	10.00	10.10	10.20
e	2.54 BSC		
H	14.70	15.10	15.50
H2	1.17	1.27	1.40
L	2.00	2.30	2.60
L1	1.45	1.55	1.70
L2	2.5 REF		
L4	0.25 BSC		
θ	0°	5°	8°
θ1	5°	7°	9°
θ2	1°	3°	5°
ΦP1	1.40	1.50	1.60
DEP	0.05	0.10	0.20