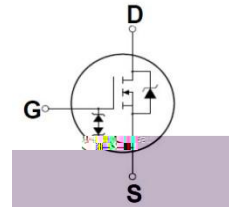
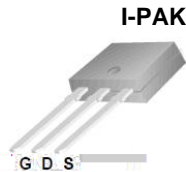


Features

- Low gate charge
- 100% avalanche tested
- Improved dv/dt capability
- RoHS compliant
- Halogen free package
- JEDEC Qualification
- Improved ESD performance

N-channel MOSFET

BV_{DSS}	I_D	$R_{DS(on)}$
650V	4.0A	< 2.4 Ω



Device	Package	Marking	Remark
TMD4N65AZ / TMU4N65AZ	D-PAK/I-PAK	TMD4N65AZ / TMU4N65AZ	RoHS
TMD4N65AZG / TMU4N65AZG	D-PAK/I-PAK	TMD4N65AZG / TMU4N65AZG	Halogen Free

Absolute Maximum Ratings

Parameter	Symbol	TMD4N65AZ(G)/TMU4N65AZ(G)	Unit
Drain-Source Voltage	V_{DSS}	650	V
Gate-Source Voltage	V_{GS}	30	V
Continuous Drain Current	I_D	$T_C = 25$	4
		$T_C = 100$	2.63
Pulsed Drain Current (Note 1)	I_{DM}	16	A
Single Pulse Avalanche Energy (Note 2)	E_{AS}	206	mJ
Repetitive Avalanche Current (Note 1)	I_{AR}	4	A
Repetitive Avalanche Energy (Note 1)	E_{AR}	9.84	mJ
Power Dissipation	P_D	$T_C = 25$	98.4
		Derate above 25	0.78
Peak Diode Recovery dv/dt (Note 3)	dv/dt	4.5	V/ns
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	
Maximum lead temperature for soldering purposes,	T_L	300	

* Limited only by maximum junction temperature

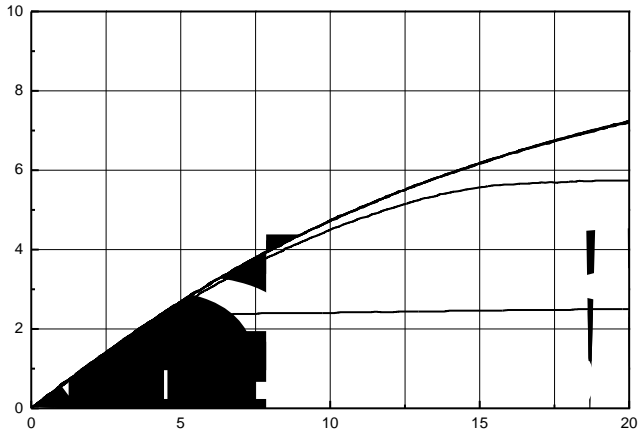
Thermal Characteristics

Parameter	Symbol	TMD4N65AZ(G)/TMU4N65AZ(G)	Unit
Maximum Thermal resistance, Junction-to-Case	$R_{\theta JC}$	1.27	/W
Maximum Thermal resistance, Junction-to-Ambient	$R_{\theta JA}$	110	/W

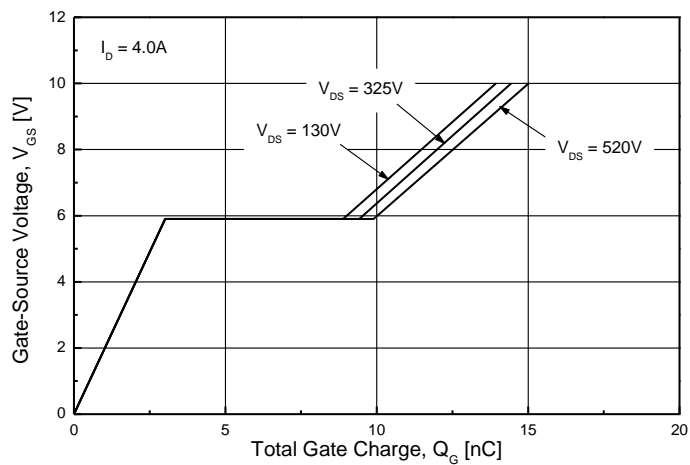
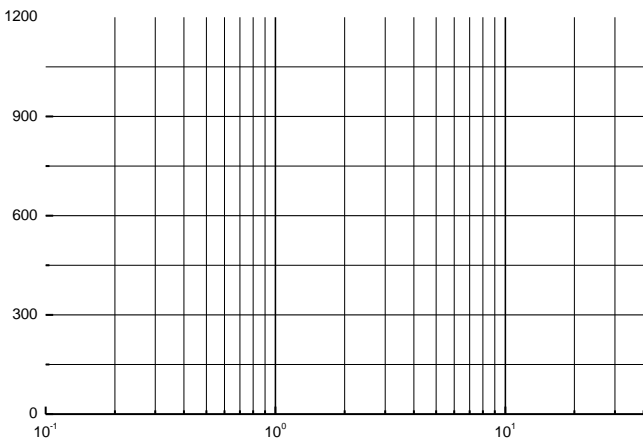
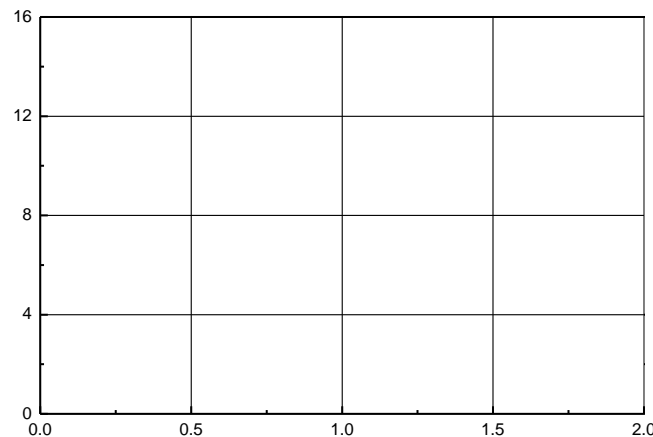
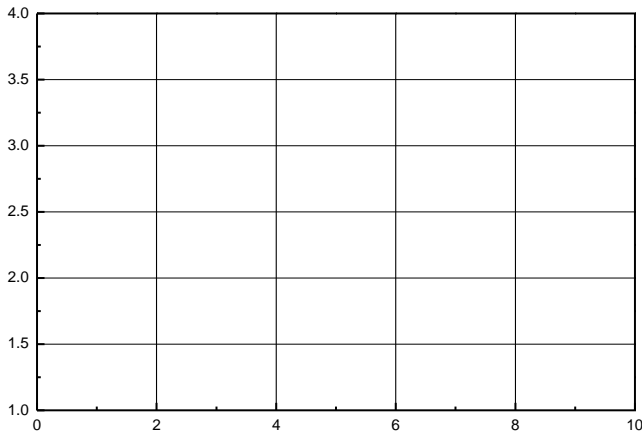
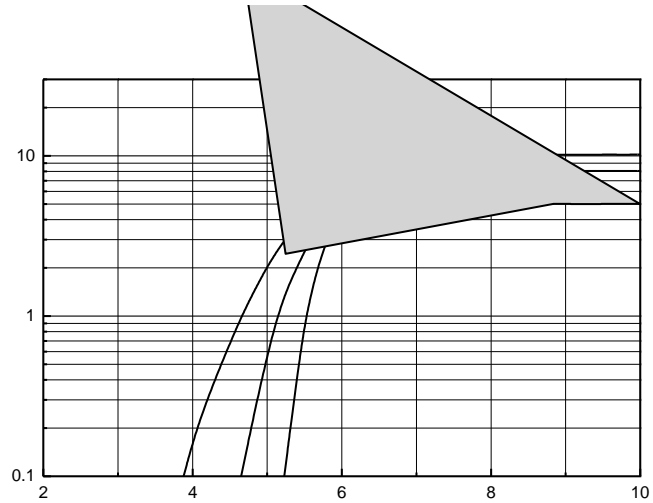
Electrical Characteristics : $T_C=25$, unless otherwise noted

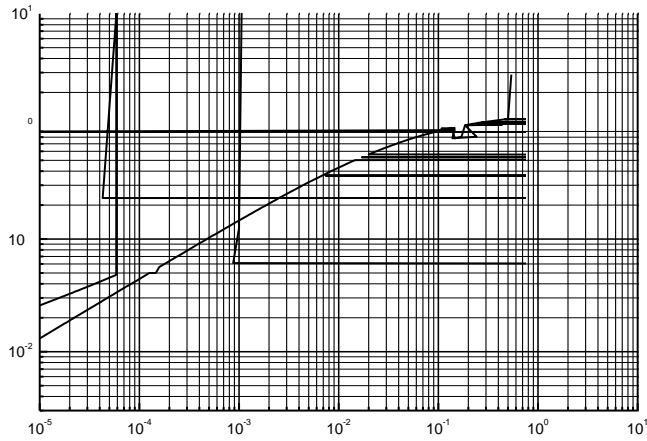
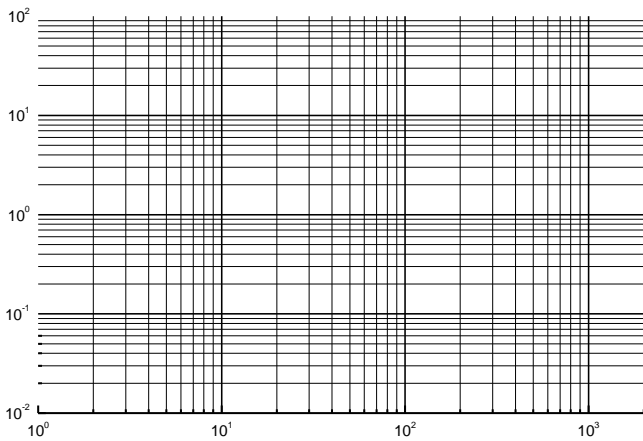
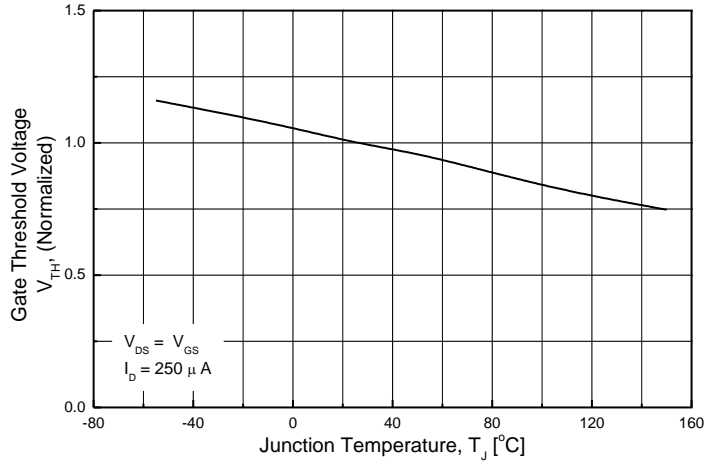
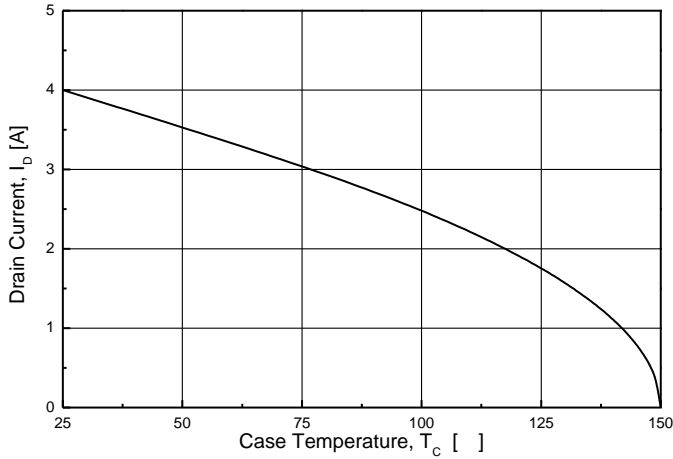
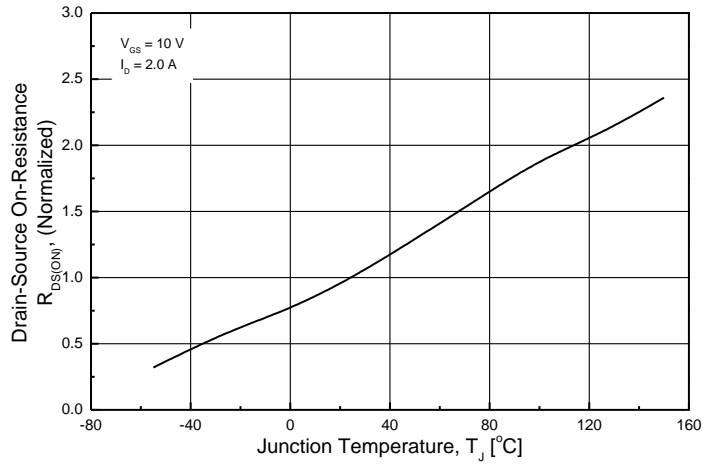
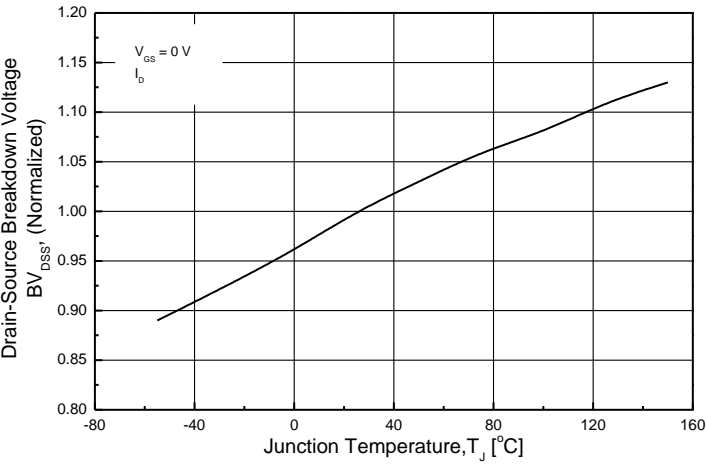
Parameter	Symbol	Test condition	Min	Typ	Max	Units
OFF						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	650	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS} = 0\text{ V}, V_{DS} = 50\text{ V}$	11.25	669.62	11.25	μA
		$V_{GS} = 0\text{ V}, V_{DS} = 520\text{ V}, T_C = 125^\circ\text{C}$	--	--	10	μA
Forward Gate-Source Leakage Current	I_{GSSF}	$V_{GS} = 30\text{ V}, V_{DS} = 0\text{ V}$	--	--	100	μA
Reverse Gate-Source Leakage Current	I_{GSSR}	$V_{GS} = -30\text{ V}, V_{DS} = 0\text{ V}$				

- Note :
1. Repeated rating : Pulse width limited by safe operating area
 2. $L=23.8\text{mH}, I_{AS} = 4.0\text{A}, V_{DD} = 50\text{V}, R_G = 25$, Starting $T_J= 25$
 3. $I_{SD} = 4.0\text{A}, di/dt = 100\ \mu\text{A}/\mu\text{s}, V_{DD} = 50\text{V}, V_{DS} = 50\text{V}$, Starting $T_J= 25$
 5. Essentially Independent of Operating Temperature Typical Characteristics

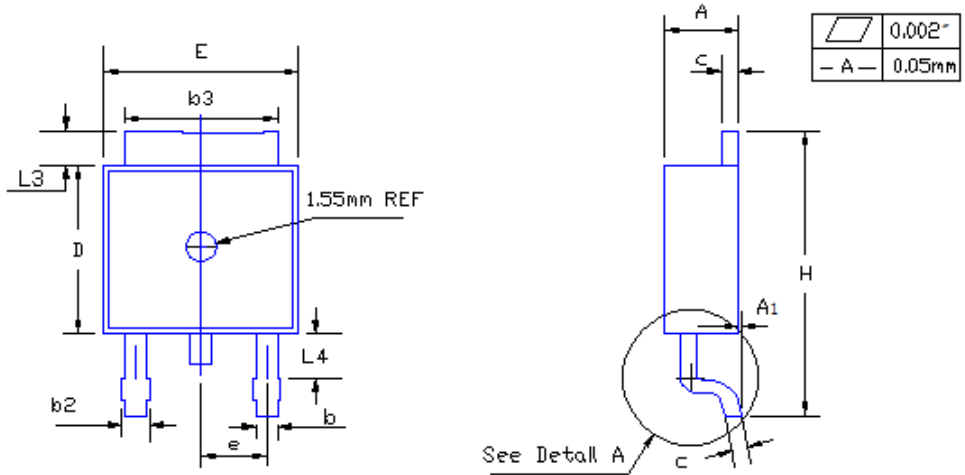


≠ 30V





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
Ø	0	8

TO-251 (I-PAK) MECHANICAL DATA



SYMBOL	MILLIMETERS	
	MIN	MAX
A	2.19	2.38
A1	1.04	1.23
b	0.64	0.89
b1	0.84	1.14
b2	5.23	5.48
c	0.46	0.61
D	5.91	6.28
E	6.21	6.59
e	2.28 TYP	
L	8.89	9.65
L2	0.89	1.27