

Silicon N Channel MOS Type (τ - MOS IV)

High Speed, High Current Switching Applications.
Chopper Regulator, DC-DC Converter and Motor Drive Applications.

- Low Drain-Source ON Resistance: $R_{DS(ON)} = 1.8\Omega$ (Typ.)
- High Forward Transfer Admittance: $|Y_{fs}| = 3.3S$ (Typ.)
- Low Leakage Current: $I_{BSS} = 100\mu A$ (Max.) ($V_{DS} = 600V$)
- Enhancement Mode: $V_{th} = 2.0 \sim 4.0V$ ($V_{DS} = 10V, I_D = 1mA$)

Maximum Ratings ($T_a = 25^{\circ}C$)

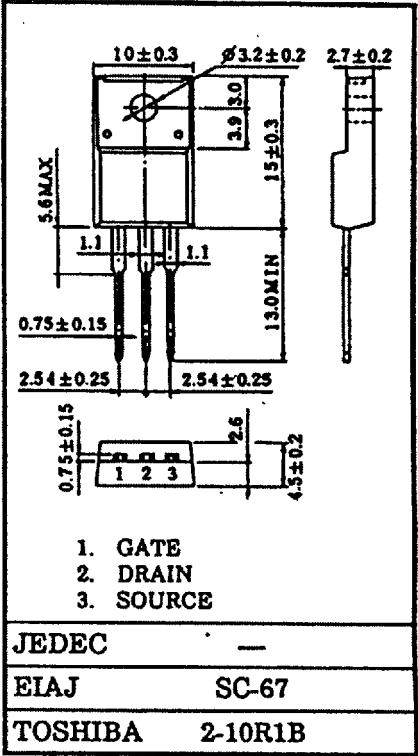
Characteristic		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	600	V
Drain-Gate Voltage ($R_{GS} = 20k\Omega$)		V_{DGR}	600	V
Gate-Source Voltage		V_{GSS}	± 30	V
Drain Current	DC	I_D	3.5	A
	Pulse	I_{DP}	14	A
Drain Power Dissipation ($T_c = 25^{\circ}C$)		P_D	40	W
Channel Temperature		T_{ch}	150	$^{\circ}C$
Storage Temperature Range		T_{stg}	$-55 \sim 150$	$^{\circ}C$

Thermal Characteristics

Characteristic	Symbol	Max.	Unit
Thermal Resistance, Channel to Case	$R_{th(ch-c)}$	3.125	$^{\circ}C/W$
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	62.5	$^{\circ}C/W$

This transistor is an electrostatic sensitive device.
Please Handle With Caution.

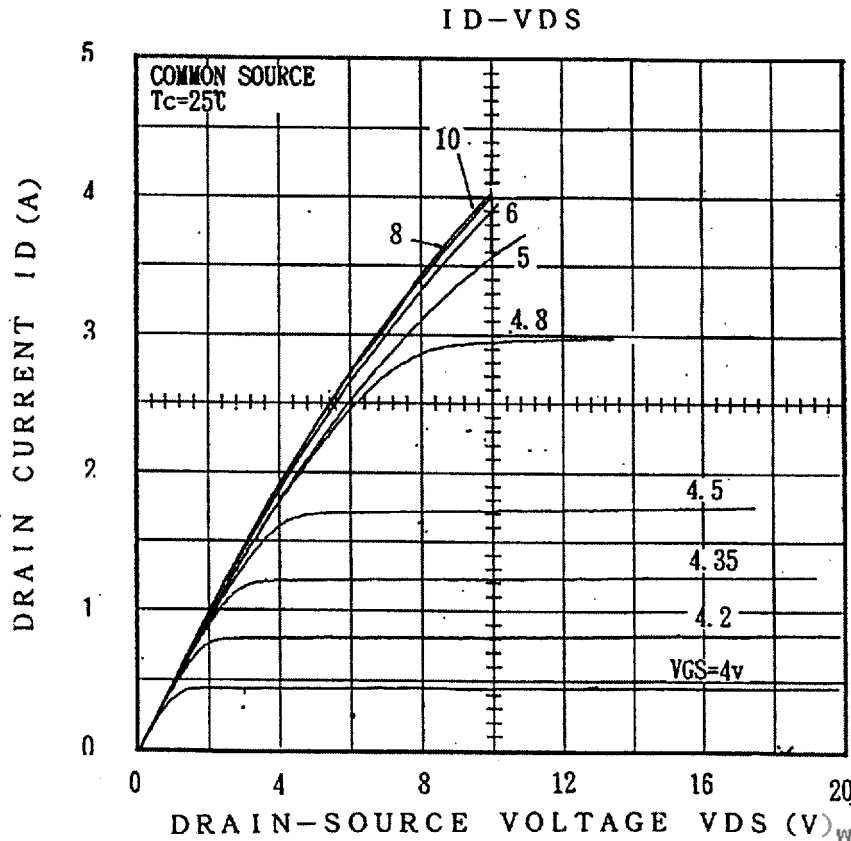
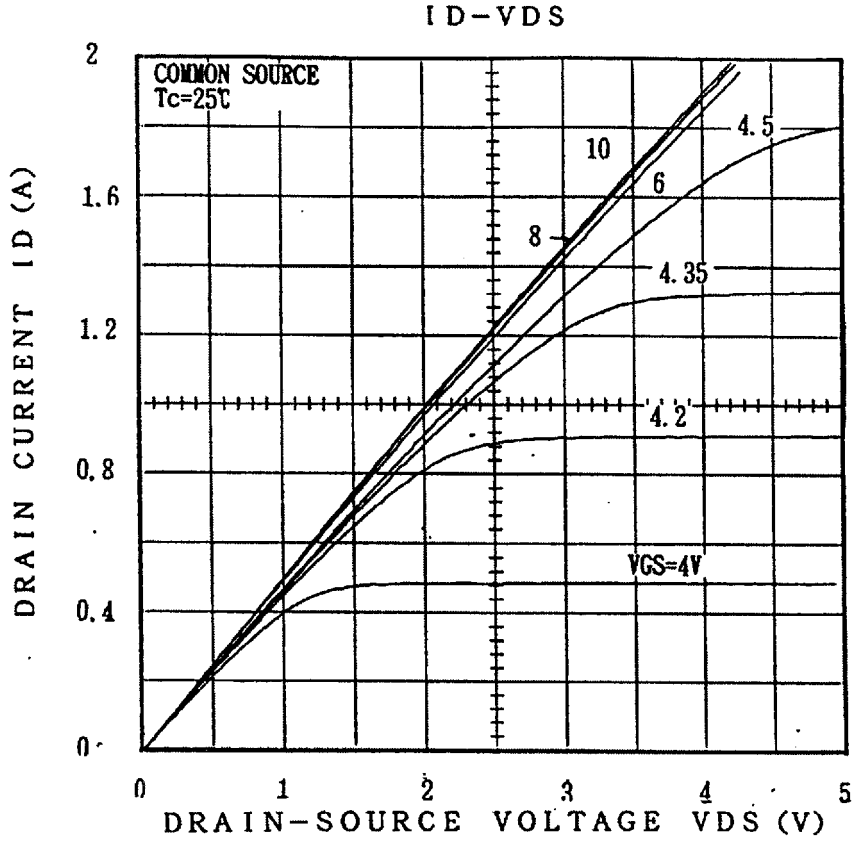
Unit in mm

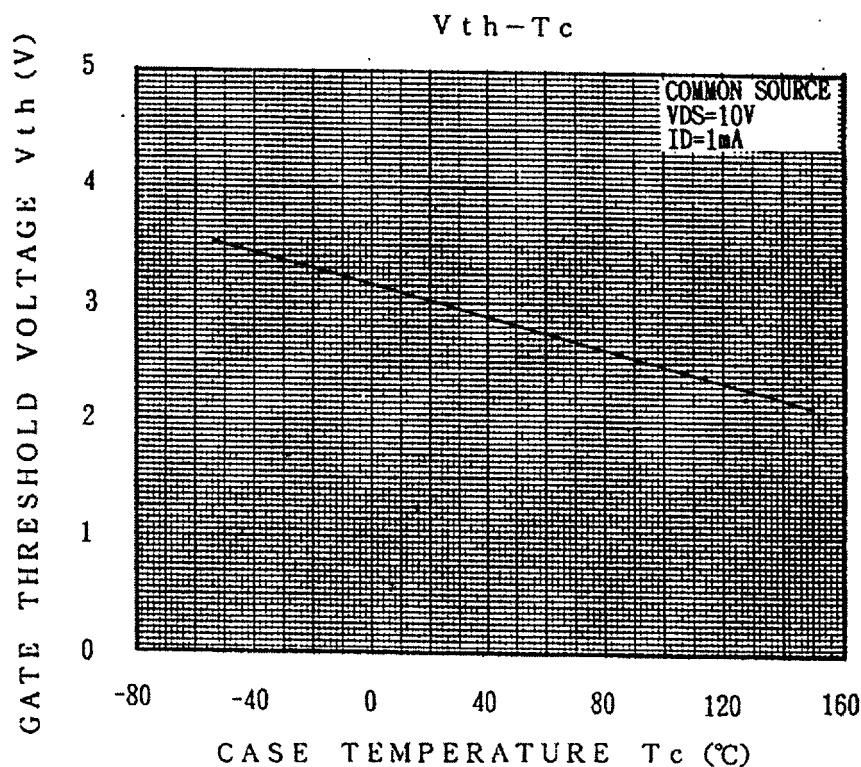
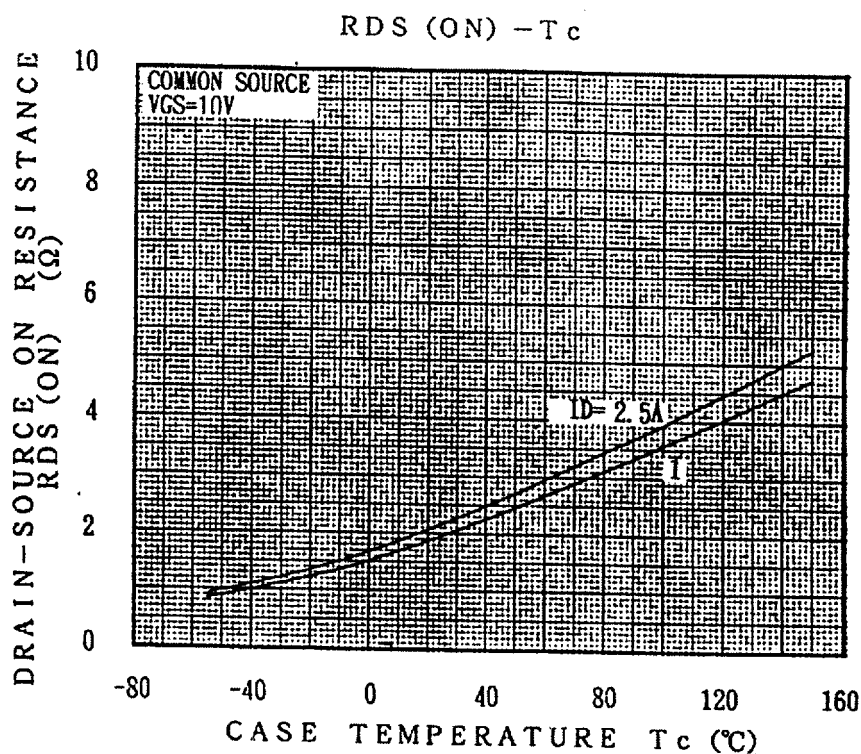


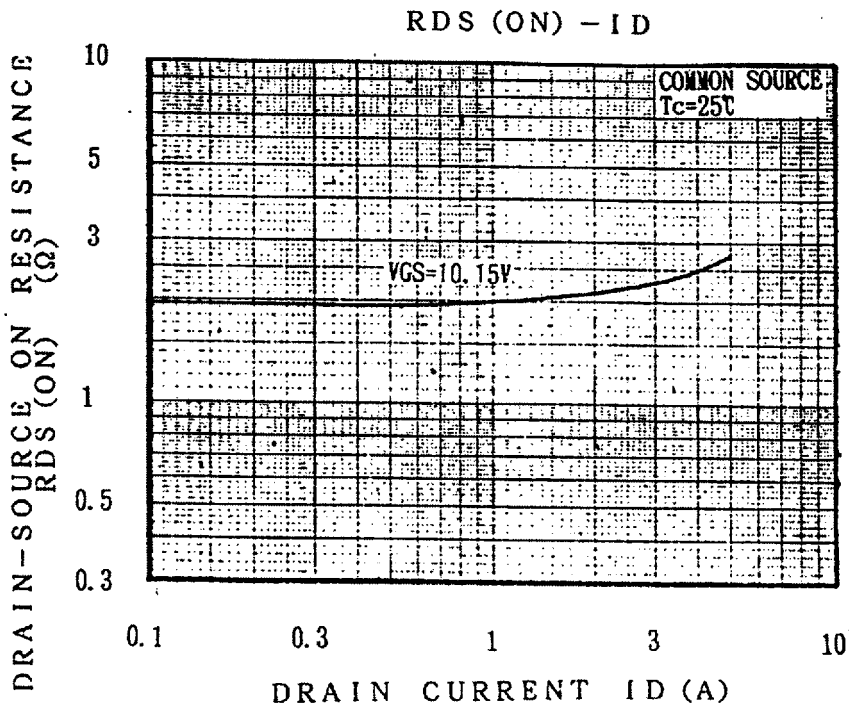
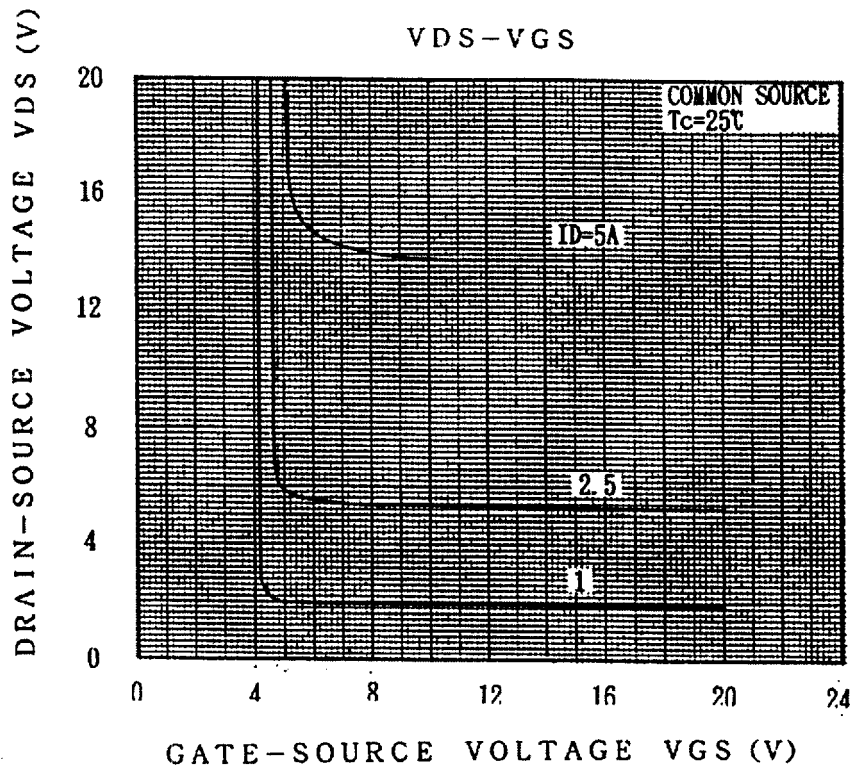
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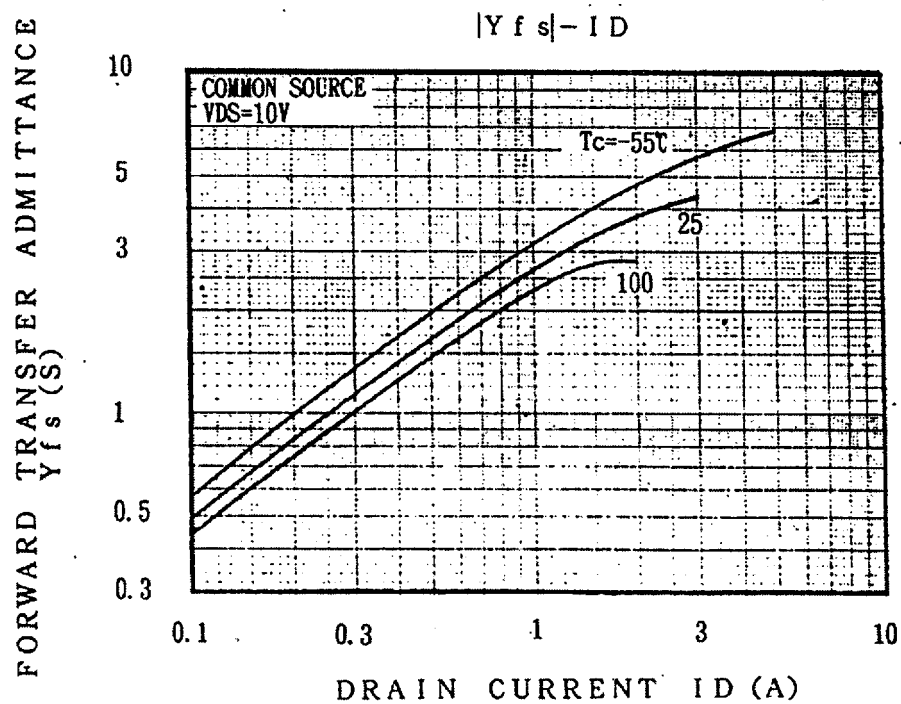
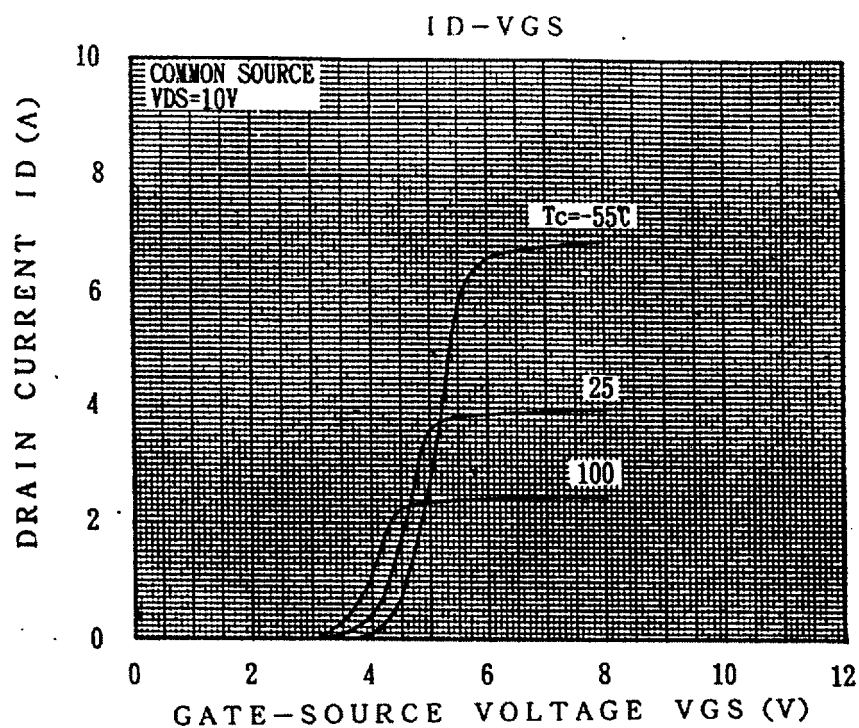
Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Gate Leakage Current		I_{GSS}	$V_{GS} = \pm 25V, V_{DS} = 0V$	–	–	± 10	μA
Gate-Source Breakdown Voltage		$V_{(BR)GSS}$	$I_G = 100 \mu A, V_{DS} = 0V$	± 30	–	–	V
Drain Cut-Off Current		I_{DSS}	$V_{DS} = 600V, V_{GS} = 0V$	–	–	100	μA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	$I_D = 10 mA, V_{GS} = 0V$	600	–	–	V
Gate Threshold Voltage		V_{th}	$V_{DS} = 10V, I_D = 1 mA$	2.0	–	4.0	V
Drain-Source ON Resistance		$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 1.8A$	–	1.8	2.2	Ω
Forward Transfer Admittance		$ Y_{fs} $	$V_{DS} = 10V, I_D = 1.8A$	2.0	3.3	–	S
Input Capacitance		C_{iss}	$V_{DS} = 10V, V_{GS} = 0V$ $f = 1 MHz$	–	660	–	pF
Reverse Transfer Capacitance		C_{rss}		–	40	–	
Output Capacitance		C_{oss}		–	180	–	
Switching Timing	Rise Time	t_r	–	15	–	ns	
	Turn-on Time	t_{on}		–	25		–
	Fall Time	t_f		–	25		–
	Turn-off Time	t_{off}		–	75		–
Total Gate Charge (Gate-Source Plus Gate-Drain)		Q_g	$V_{DD} = 400V, V_{GS} = 10V$ $I_D = 3.5A$	–	15	–	nC
Gate-Source Charge		Q_{gs}		–	7.5	–	
Gate-Drain ("Miller") Charge		Q_{gd}		–	7.5	–	

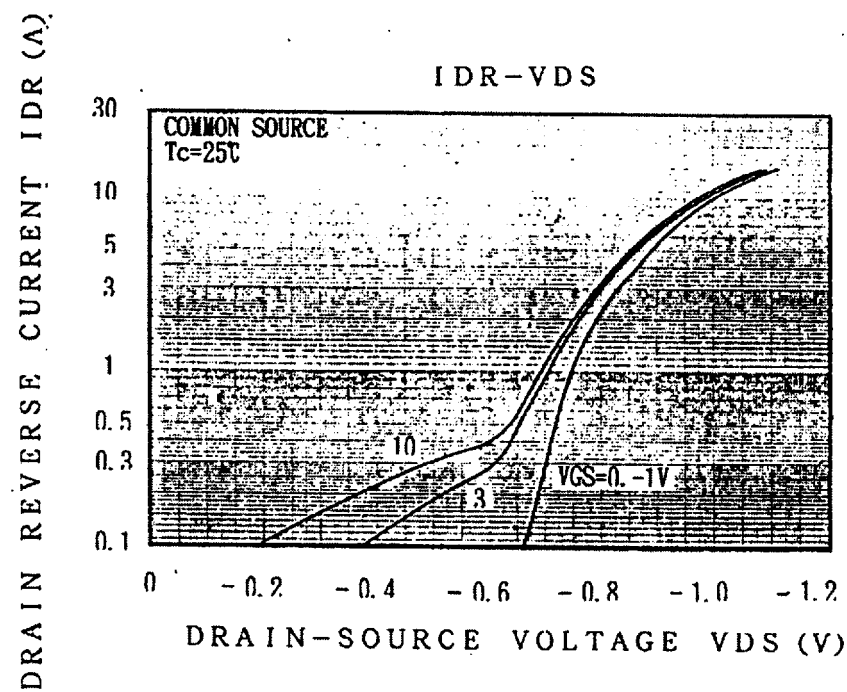
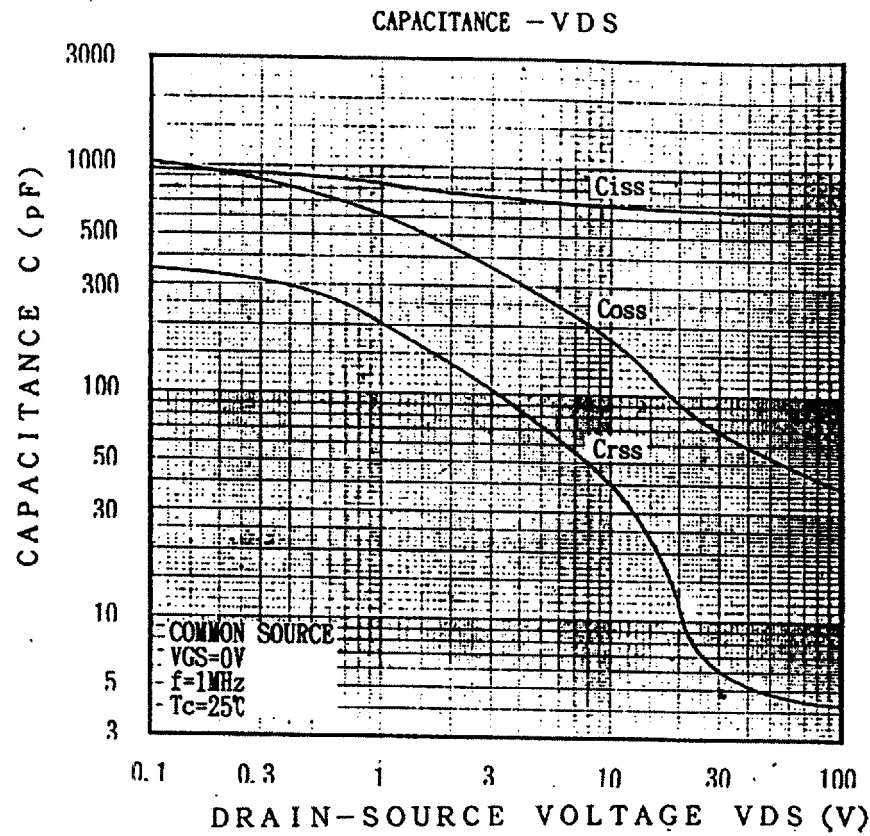
Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Continuous Drain Reverse Current	I_{DR}	—	—	—	3.5	A
Pulse Drain Reverse Current	I_{DRP}	—	—	—	14	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 3.5A, V_{GS} = 0V$	—	—	−1.7	V
Reverse Recovery Time	t_{rr}	$I_{DR} = 3.5A, V_{GS} = 0V$ $dI_{DR} / dt = 100A / \mu s$	—	450	—	ns
Reverse Recovery Charge	Q_{rr}		—	2.4	—	μC

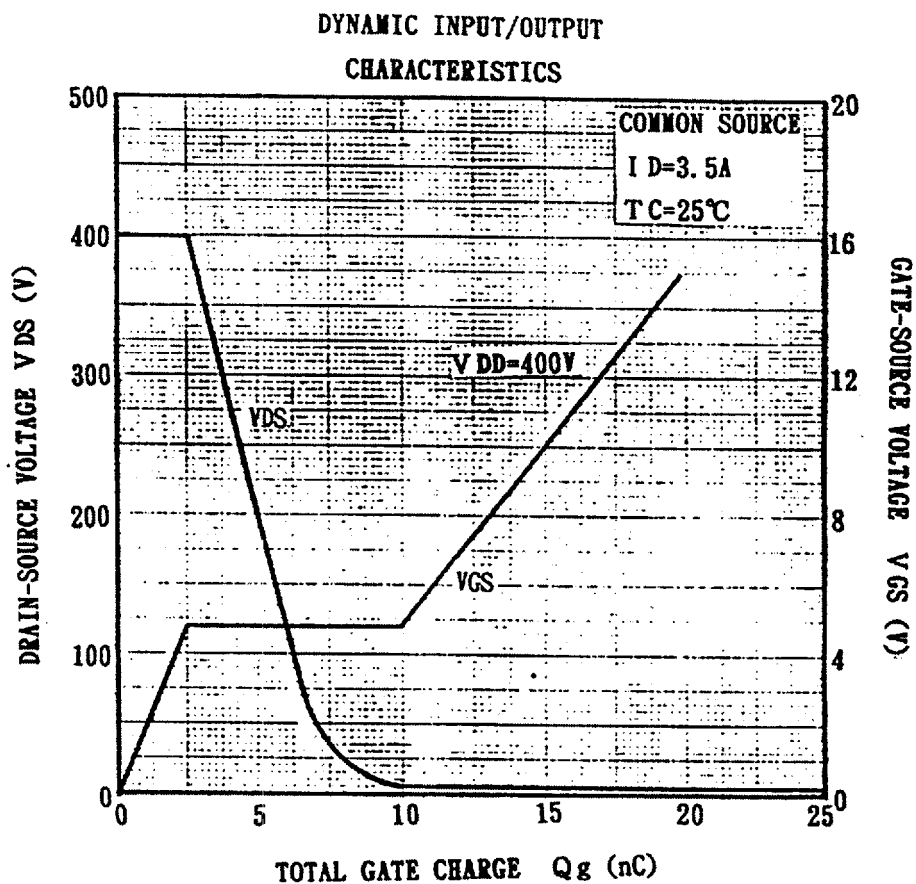


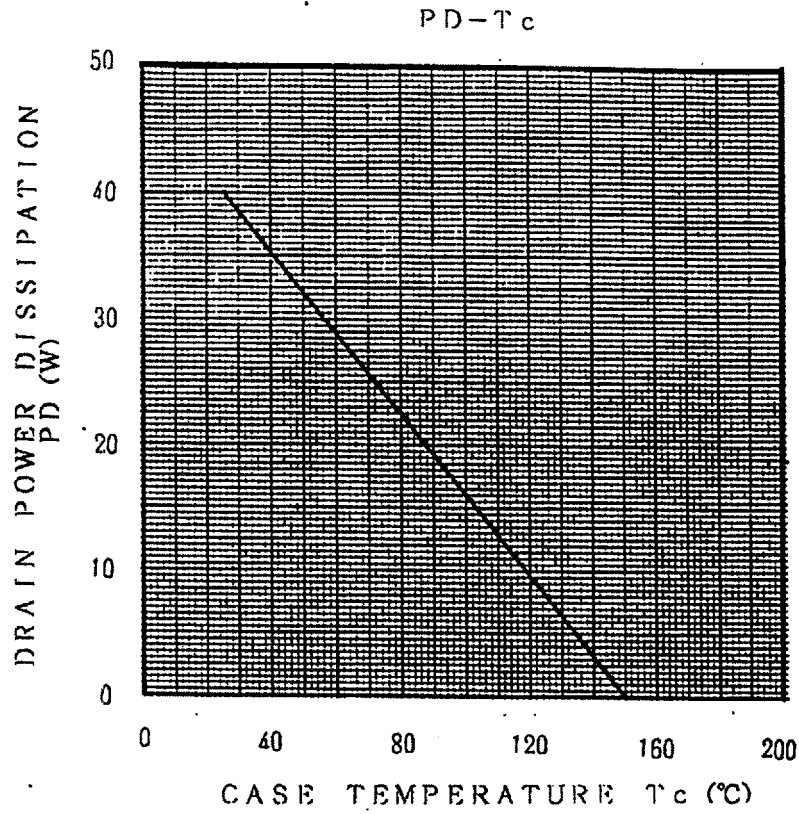












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